



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA-HQ-OAR-2020-0560; FRL-7546-02-OAR]

RIN 2060–AU59

National Emission Standards for Hazardous Air Pollutants: Mercury Cell Chlor-Alkali Plants Residual Risk and Technology Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action finalizes the residual risk and technology review (RTR) conducted for the Mercury Cell Chlor-Alkali Plants source category regulated under national emission standards for hazardous air pollutants (NESHAP). In addition, this action finalizes the beyond-the-floor determination that EPA performed in response to a petition for reconsideration of the 2003 NESHAP. These final amendments prohibit mercury emissions from existing mercury cell chlor-alkali plants based on the results of our technology review and our beyond-the-floor maximum achievable control technology (MACT) determination. The compliance date for this requirement is three years. Since mercury emissions will be eliminated as a result of the final rule standards, any adverse health or environmental effects from mercury emissions from the source category will also be eliminated in that three-year time frame. Furthermore, the EPA is finalizing work practice standards and instrumental monitoring of mercury to minimize fugitive mercury emissions from the cell rooms during the period of time before emissions are eventually eliminated. In addition, the EPA is finalizing work practice standards to minimize fugitive chlorine emissions from mercury cell chlor-alkali plants, which were not previously regulated under the NESHAP. The EPA is also finalizing revisions related to emissions during periods of

startup, shutdown, and malfunction (SSM) and amendments to correct a few minor errors in compliance provisions in the 2003 rule.

DATES: This final rule is effective on May 6, 2022.

ADDRESSES: The U.S. Environmental Protection Agency (EPA) has established a docket for this action under Docket ID No. EPA-HQ-OAR-2020-0560. All documents in the docket are listed on the <https://www.regulations.gov/> website. Although listed, some information is not publicly available, e.g., Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through <https://www.regulations.gov/>, or in hard copy at the EPA Docket Center, WJC West Building, Room Number 3334, 1301 Constitution Ave., NW, Washington, DC. The Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m. Eastern Standard Time (EST), Monday through Friday. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the EPA Docket Center is (202) 566-1742. Hand Deliveries and couriers may be received by scheduled appointment only. For further information and updates on EPA Docket Center services and the current status, please visit us online at <https://www.epa.gov/dockets>.

FOR FURTHER INFORMATION CONTACT: For questions about this final action, contact Phil Mulrine, Sector Policies and Programs Division (D243-02), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-5289; fax number: (919) 541-4991; and email address: mulrine.phil@epa.gov. For specific information regarding the risk modeling methodology, contact James Hirtz, Health and Environmental Impacts Division, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-0881; fax number: (919) 541-0840; and email address: hirtz.james@epa.gov.

SUPPLEMENTARY INFORMATION:

Preamble acronyms and abbreviations. We use multiple acronyms and terms in this preamble. Throughout this document wherever “we,” “us,” or “our” is used, it is intended to refer to the EPA. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

AEGL	acute exposure guideline level two
CAA	Clean Air Act
CFR	Code of Federal Regulations
Cl ₂	Chlorine
CRA	Congressional Review Act
EPA	Environmental Protection Agency
ERT	Electronic Reporting Tool
HAP	hazardous air pollutants(s)
HCl	hydrochloric acid
Hg	mercury
HI	hazard index
HQ	hazard quotient
MACT	maximum achievable control technology
MATS	Mercury and Air Toxics Standards
NAIC	North American Industry Classification System
NESHAP	national emission standards for hazardous air pollutants
NTTAA	National Technology Transfer and Advancement Act
NOCS	Notification of Compliance Status report
NRDC	Natural Resources Defense Council
OMB	Office of Management and Budget
PB-HAP	HAPs known to be persistent and bioaccumulative in the environment
PDF	portable document format
PM	particulate matter
ppm	parts per million
ppmv	parts per million by volume
PRA	Paperwork Reduction Act
REL	reference exposure limit
RTR	risk and technology review
SSM	startup, shutdown, and malfunction
SV	screening value
TOSHI	target organ-specific hazard index
tpy	tons per year
UMRA	Unfunded Mandates Reform Act

Background information. On January 8, 2021, the EPA proposed revisions to the 2003 Mercury Cell Chlor-Alkali Plants NESHAP, 40 CFR part 63, subpart IIIII, based on our RTR

and MACT beyond-the-floor analyses (86 FR 1362, January 8, 2021). In this action, we are finalizing decisions and revisions for the rule. We summarize the comments we timely received regarding the proposed rule and provide our responses in this preamble. A “track changes” version of the regulatory language that incorporates the changes in this action is available in the docket.

Organization of this document. The information in this preamble is organized as follows:

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H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

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I. General Information

A. Does this action apply to me?

Regulated entities. Categories and entities potentially regulated by this action are shown in Table 1 of this preamble.

Table 1. NESHAP and Industrial Source Categories Affected by this Final Action

NESHAP and Source Category	NAICS ¹ Code
Mercury Cell Chlor-Alkali Plants	325180

¹ North America Industry Classification System.

Table 1 of this preamble is not intended to be exhaustive, but rather to provide a guide for readers regarding entities likely to be affected by the final action for the source category listed. To determine whether your facility is affected, you should examine the applicability criteria in the appropriate NESHAP. If you have any questions regarding the applicability of any aspect of this NESHAP, please contact the appropriate person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section of this preamble.

B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this final action will also be available on the Internet. Following signature by the EPA Administrator, the EPA will

post a copy of this final action at: <https://www.epa.gov/stationary-sources-air-pollution/mercury-cell-chloralkali-plants-national-emissions-standards>. Following publication in the *Federal Register*, the EPA will post the *Federal Register* version and key technical documents at this same website.

Additional information is available on the RTR website at <https://www.epa.gov/stationary-sources-air-pollution/risk-and-technology-review-national-emissions-standards-hazardous>. This information includes an overview of the RTR program and links to project websites for the RTR source categories.

C. Judicial Review and Administrative Reconsideration

Under Clean Air Act (CAA) section 307(b)(1), judicial review of this final action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit (the Court) by July 5, 2022. Under CAA section 307(b)(2), the requirements established by this final rule may not be challenged separately in any civil or criminal proceedings brought by the EPA to enforce the requirements.

Section 307(d)(7)(B) of the CAA further provides that only an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review. This section also provides a mechanism for the EPA to reconsider the rule if the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within the period for public comment or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule. Any person seeking to make such a demonstration should submit a Petition for Reconsideration to the Office of the Administrator, U.S. EPA, Room 3000, WJC South Building, 1200 Pennsylvania Ave., NW, Washington, DC 20460, with a copy to both the person(s) listed in the preceding **FOR FURTHER INFORMATION CONTACT** section, and

the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), U.S. EPA, 1200 Pennsylvania Ave., NW, Washington, DC 20460.

II. Background

A. What is the statutory authority for this action?

Section 112 of the CAA establishes a two-stage regulatory process to address emissions of hazardous air pollutants (HAP) from stationary sources. In the first stage, we must identify categories of sources emitting one or more of the HAP listed in CAA section 112(b) and then promulgate technology-based NESHAP for those sources. “Major sources” are those that emit, or have the potential to emit, any single HAP at a rate of 10 tons per year (tpy) or more, or 25 tpy or more of any combination of HAP. For major sources, these standards are commonly referred to as MACT standards and must reflect the maximum degree of emission reductions of HAP achievable (after considering cost, energy requirements, and non-air quality health and environmental impacts). In developing MACT standards, CAA section 112(d)(2) directs the EPA to consider the application of measures, processes, methods, systems, or techniques, including, but not limited to, those that reduce the volume of or eliminate HAP emissions through process changes, substitution of materials, or other modifications; enclose systems or processes to eliminate emissions; collect, capture, or treat HAP when released from a process, stack, storage, or fugitive emissions point; are design, equipment, work practice, or operational standards; or any combination of the above.

For these MACT standards, the statute specifies certain minimum stringency requirements, which are referred to as MACT floor requirements, and which may not be based on cost considerations. See CAA section 112(d)(3). For new sources, the MACT floor cannot be less stringent than the emission control achieved in practice by the best-controlled similar source. The MACT standards for existing sources can be less stringent than floors for new sources, but they cannot be less stringent than the average emission limitation achieved by the best-performing 12 percent of existing sources in the category or subcategory (or the best-performing

five sources for categories or subcategories with fewer than 30 sources). In developing MACT standards, we must also consider control options that are more stringent than the floor under CAA section 112(d)(2). We may establish standards more stringent than the floor, based on the consideration of the cost of achieving the emissions reductions, any non-air quality health and environmental impacts, and energy requirements.

In the second stage of the regulatory process, the CAA requires the EPA to undertake two different analyses, which we refer to as the technology review and the residual risk review. Under the technology review, we must review the technology-based standards and revise them “as necessary (taking into account developments in practices, processes, and control technologies)” no less frequently than every 8 years, pursuant to CAA section 112(d)(6). In conducting this review, the EPA is not required to recalculate the MACT floors that were established in earlier rulemakings. *Natural Resources Defense Council v. EPA*, 529 F.3d 1077, 1084 (D.C. Cir. 2008) (*NRDC*). *Association of Battery Recyclers, Inc. v. EPA*, 716 F.3d 667 (D.C. Cir. 2013). The EPA may consider cost in deciding whether to revise the standards pursuant to CAA section 112(d)(6). The EPA is required to address regulatory gaps, such as missing standards for listed air toxics known to be emitted from the source category, and any new MACT standards must be established under CAA sections 112(d)(2) and (3), or, in specific circumstances, CAA sections 112(d)(4) or (h). *Louisiana Environmental Action Network v. EPA*, 955 F.3d 1088 (D.C. Cir. 2020) (*LEAN*). Under the residual risk review, we must evaluate the risk to public health remaining after application of the technology-based standards and revise the standards, if necessary, to provide an ample margin of safety to protect public health or to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect. The residual risk review is required within 8 years after promulgation of the technology-based standards, pursuant to CAA section 112(f). In conducting the residual risk review, if the EPA determines that the current standards provide an ample margin of safety to protect public health, it is not necessary to revise the MACT standards pursuant to CAA section

112(f).¹ For more information on the statutory authority for this rule, see

<https://www.federalregister.gov/documents/2021/01/08/2021-00174/national-emission-standards-for-hazardous-air-pollutants-mercury-cell-chlor-alkali-plants-residual>.

B. What is the Mercury Cell Chlor-Alkali Plants source category and how does the NESHAP regulate HAP emissions from the source category?

The EPA promulgated the Mercury Cell Chlor-Alkali Plants NESHAP on December 19, 2003 (68 FR 70904). The standards are codified at 40 CFR part 63, subpart IIII. The mercury cell chlor-alkali industry consists of facilities that use mercury cells to manufacture product chlorine, product caustic, and by-product hydrogen via an electrolytic process. The source category covered by these MACT standards currently includes one operating facility, Westlake located in West Virginia.

Subpart IIII covers both major and area sources. The single remaining operational mercury cell-chlor-alkali plant in the category is located at a major source site. In addition to subpart IIII, processes at this major source site are subject to subparts ZZZZ (Reciprocating Internal Combustion Engine NESHAP) and DDDDD (Industrial/Commercial/Institutional Boilers and Process Heaters). The mercury cell chlor-alkali NESHAP includes standards for mercury emissions from two types of affected sources at plant sites where chlorine and caustic are produced in mercury cells: mercury cell chlor-alkali production facility affected sources and mercury recovery facility affected sources. The 2003 rule prohibited mercury emissions from new and reconstructed mercury cell chlor-alkali production affected sources. 40 CFR 63.8190(a)(1). For existing mercury cell chlor-alkali production affected sources, the 2003 standards included emission limitations for mercury emissions from process vents (including

¹ The Court has affirmed this approach of implementing CAA section 112(f)(2)(A): *NRDC*, 529 F.3d at 1083 (“If EPA determines that the existing technology-based standards provide an ‘ample margin of safety,’ then the Agency is free to readopt those standards during the residual risk rulemaking.”).

emissions from end-box ventilation systems and hydrogen systems) and work practices for fugitive mercury emissions from the cell room. 40 CFR 63.8190(a)(2), 63.8192(a) through (f).

For new, reconstructed, and existing mercury recovery facilities, the 2003 NESHAP included emission limitations for mercury emissions from oven type thermal recovery unit vents and non-oven type thermal recovery unit vents. 40 CFR 63.8190(a)(3). Note that the single remaining operational facility does not operate a mercury recovery facility, so there are no operating mercury recovery facilities subject to subpart IIII.

The 2003 rule did not promulgate standards for chlorine (Cl₂) or hydrochloric acid (HCl), citing the authority of section 112(d)(4) of the CAA (68 FR 70906). In its 2003 action (68 FR 70904), the EPA promulgated the initial Mercury Cell Chlor-Alkali Plants NESHAP pursuant to CAA section 112(d)(2) and (3) and added the source category to the EPA's Source Category List under CAA sections 112(c)(1), as well as under (c)(3), (c)(6) and (k)(3)(B), in each case because of the mercury emissions.

Following promulgation of the 2003 Mercury Cell Chlor-Alkali Plants NESHAP, the EPA received a petition to reconsider several aspects of the rule from the Natural Resources Defense Council (NRDC). NRDC also filed a petition for judicial review of the rule in the U.S. Court of Appeals for the District of Columbia Circuit. In a letter dated April 8, 2004, the EPA granted NRDC's petition for reconsideration and on July 20, 2004, the court placed the petition for judicial review in abeyance pending the EPA's action on reconsideration.

The EPA issued proposed revisions to the 2003 rule on June 11, 2008 (73 FR 33258) and on March 14, 2011 (76 FR 13852), to respond to the reconsideration petition. This final action completes EPA's rulemaking following those two proposals and the third action proposed on January 8, 2021 (86 FR 1362), and completes the EPA's action in response to the 2004 petition for reconsideration of the 2003 rule.

C. What changes did we propose for the Mercury Cell Chlor-Alkali Plants source category in our January 8, 2021, proposal?

On January 8, 2021, the EPA published a proposed rule in the *Federal Register* for the Mercury Cell Chlor-Alkali Plants NESHAP, 40 CFR part 63, subpart IIII, that took into consideration the RTR analyses and the MACT beyond-the-floor analysis. In the proposed rule, we proposed: (1) the determination that risks due to emissions of HAP are acceptable from the Mercury Cell Chlor-Alkali Plants source category and that the 2003 NESHAP provides an ample margin of safety to protect public health; (2) to amend the requirements for cell room fugitive mercury emissions to require work practice standards for the cell rooms plus instrumental monitoring of cell room fugitive mercury emissions under the technology review; (3) work practice standards for fugitive chlorine emissions from mercury cell chlor-alkali plants, which were not previously regulated under the NESHAP; (4) revisions related to emissions during periods of startup, shutdown and malfunction (SSM), which had also been addressed in the 2011 proposed rule; (5) provisions for electronic submission of performance test results, compliance reports, and Notification of Compliance Status (NOCS) reports; and (6) amendments to correct minor errors and improve the compliance provisions of the rule, which had also been addressed in the 2008 and 2011 proposals.

With regard to our technology review and an overdue beyond-the-floor determination, as explained in the January 2021 document (86 FR 1362, January 8, 2021), we evaluated two options: (1) improved cell room mercury monitoring and work practices to minimize emissions; and (2) the elimination of Hg emissions by requiring the conversion to a non-Hg technology.

Based on this evaluation, we proposed option 1, as mentioned above, however we also described option 2 (mercury elimination) in detail in the January 2021 notice and solicited comments. Specifically, we explained that based on consideration of the updated costs and cost effectiveness and uncertainties, and given the passage of time, and the fact that the cost-effectiveness data and analysis done in 2011 were based on two facilities that are no longer operating, we questioned at that time whether those 2011 analyses would still be transferable to the one remaining operating facility. Consequently, we did not propose to require the elimination

of mercury in the January 2021 document. However, we solicited comments, data, and other information regarding this proposed decision, including data and information regarding the capital and annual costs, cost effectiveness, non-air impacts, and other relevant information that would be relevant for the remaining facility regarding whether the NESHAP should include a zero-mercury standard as a beyond-the-floor MACT standard. We also stated that we intend to consider any such submitted data and information, in addition to the data and information contained in the records for the 2008 and 2011 proposals and in the 2021 proposal, in reaching final conclusions regarding a zero-mercury standard (see 86 FR 1362, January 8, 2021).

III. What is included in this final rule

This action finalizes the EPA's determinations pursuant to the RTR and MACT provisions of CAA section 112 for the Mercury Cell Chlor-Alkali Plants source category and amends the Mercury Cell Chlor-Alkali Plants NESHAP based on those determinations.

A. What are the final rule amendments based on the risk review for the Mercury Cell Chlor-Alkali Plants source category?

No changes to the Mercury Cell Chlor-Alkali Plants NESHAP are being promulgated to meet the requirements of CAA section 112(f). Under this action, for purposes of section 112(f), we are finalizing the risk assessments and our determination that the risks from the Mercury Cell Chlor-Alkali Plants source category are acceptable, the 2003 standards provide an ample margin of safety to protect public health, and more stringent standards are not necessary to prevent an adverse environmental effect.

B. What are the final rule amendments related to a non-mercury option for the Mercury Cell Chlor-Alkali Plants Source Category pursuant to sections 112(d)(2), (3), and (6)?

To satisfy the requirements of CAA sections 112(d)(2), (d)(3), and (6), including to respond to the petition for reconsideration of the 2003 rule by completing our MACT beyond-the-floor analysis, we are revising the MACT standards to prohibit mercury emissions from existing mercury cell chlor-alkali plants. Specifically, these amendments prohibit mercury

emissions from existing mercury chlor-alkali production facility affected sources. This makes the mercury standard for existing sources the same as the standard for new and reconstructed sources that has been in the NESHAP since 2003. Since we conclude that it is improbable that a mercury cell chlor-alkali plant can be operated without mercury emissions, we expect this revision will effectively require the lone remaining mercury cell chlor-alkali plant in operation in the U.S. to cease production of chlorine with their single mercury cell production unit. We anticipate the facility will continue to produce chlorine through its other, higher-volume non-mercury chlorine production units located at the Westlake facility and may convert the mercury cell unit to a membrane cell or other non-mercury chlorine production process. There are no mercury recovery facilities still in operation in the U.S. This final rule provides a three-year period to comply with the requirement to eliminate mercury emissions from the single remaining existing affected source. To demonstrate compliance, the owner or operator will need to submit a notification certifying that all mercury emissions have been eliminated permanently no later than 120 days after the compliance date.

C. What are the final rule amendments based on the technology review for the Mercury Cell Chlor-Alkali Plants source category?

We determined that there are developments in practices, processes, and control technologies that warrant revisions to the MACT standards for this source category. As noted above, we are revising the MACT standards to include a prohibition of mercury emissions, which is based on both a section 112(d)(6) technology review and our beyond-the-floor review under section 112(d)(2) and (3) in response to NRDC's 2004 petition for reconsideration. Also based on the section 112(d)(6) technology review and in response to NRDC's 2004 petition, we are amending the requirements for cell room fugitive mercury emissions to require work practice standards for the cell rooms along with instrumental monitoring of cell room fugitive mercury emissions during the period of time before emissions are eventually eliminated. In addition,

under the technology review, we identified a regulatory gap, and as discussed below, we are establishing new standards under CAA section 112(h).

D. What are the final rule amendments pursuant to sections 112(d)(2) and (3) and (h) for the Mercury Cell Chlor-Alkali Plants source category?

In addition to the requirements for mercury described above, we are also finalizing amendments pursuant to section 112(h) for chlorine emissions, similar to the standards we proposed in January 2021 (86 FR 1362), that require implementation of work practices to minimize chlorine emissions from the mercury cell chlor-alkali processes. Further details regarding these work practice standards are described in section IV.D of this document.

E. What are the final rule amendments addressing emissions during periods of startup, shutdown, and malfunction?

We are finalizing amendments related to provisions that apply during periods of SSM that the EPA proposed on January 8, 2021. Further details are provided in section IV.E of this document.

F. What are the effective and compliance dates of the standards?

The revisions to the MACT standards being promulgated in this action are effective on May 6, 2022. The compliance date for existing mercury cell chlor-alkali plants to eliminate mercury emissions is May 6, 2025.

These final amendments will essentially require that the single remaining operating mercury cell chlor-alkali facility either convert its one mercury cell unit to a non-mercury technology (its other units are already using non-mercury technology) or close that mercury cell unit and thereafter rely solely on its other non-mercury units for chlorine production. Either of these options will require significant time for the company to reach a decision and to develop and implement a plan of action. For example, it is expected that it could take between six months and one year to develop an engineering design and plan for conversion. The facility would then need to solicit bids for the conversion, which could take up to six months. Construction could then

take up to two years. In addition, arrangements will need to be made to dismantle the mercury cell facility, to store the elemental mercury removed from the cells and to dispose of the mercury-contaminated wastes. The most recent conversion in the U.S. was the facility in Ashtabula, Ohio. This Ashtabula facility was, like the West Virginia, facility, one of the smaller capacity mercury cell units in the U.S. (less than 75,000 tons of chlorine per year). It was also of similar age (Ashtabula constructed in 1963 and West Virginia in 1958) and was located in a neighboring state. The company announced the plans to convert their mercury cell process to membrane cells in 2014. They broke ground in 2017 and the conversion was complete in 2020. In conclusion, six years elapsed between the time the decision to convert was made and the conversion was completed, which included three full years for the dismantling/construction. Therefore, we conclude that the full three-year compliance period allowed by section 112(i)(3) of the CAA to meet new or revised emission standards is warranted. Moreover, as discussed further below, this period will provide ample time for the United States, via the elimination of mercury emissions from the plant, to meet its obligations to eliminate mercury emissions from this source category under the international treaty known as the Minamata Convention.

For existing sources, in 2021, we proposed two changes to the work practice standards. One of these changes was the requirement to operate a cell-room mercury monitoring program in addition to mercury work practices. This change was proposed in both 2008 and 2011. The second proposed change is a program to require work practices to reduce fugitive chlorine emissions. While these proposed work practice standards were based on the practices in place at the single facility in the source category, they will require some modifications to the procedures currently employed at the facility. Specifically, they will need to develop and implement a recordkeeping system to record and maintain the records required for the mercury cell and fugitive chlorine work practices and to incorporate the required material in the requisite reports. As proposed, we are providing 180 days for the facility to modify their current procedures.

Therefore, the mercury and chlorine work practice standards being promulgated in this action require compliance on November 2, 2022.

We also proposed in January 2021, a change to the SSM requirements to remove the exemption from the requirements to meet the standards during SSM periods and to remove the requirement to develop and implement an SSM plan. This change was also proposed in 2008 and 2011. Our experience with similar industries shows that this sort of regulated facility generally requires a time period of 6 months to read and understand the amended rule requirements; to evaluate their operations to ensure that they can meet the standards during periods of startup and shutdown as defined in the rule and make any necessary adjustments; and to update their operation, maintenance, and monitoring plans to reflect the revised requirements. As proposed, we are providing 180 days for the facility to comply with the revised SSM requirements. As such, these revisions require compliance by November 2, 2022.

IV. What is the rationale for our final decisions and amendments for the Mercury Cell Chlor-Alkali Plants source category?

For each issue, this section provides a description of what we addressed in the proposed rules for the source category and what we are finalizing for the issue, the EPA's rationale for the final decisions and amendments, and the comments and responses.

A. Residual Risk Review for the Mercury Cell Chlor-Alkali Plants Source Category

1. What did we propose pursuant to CAA section 112(f) for the Mercury Cell Chlor-Alkali Plants source category?

We proposed that health risks due to emissions of HAP from the Mercury Cell Chlor-Alkali Plants source category are acceptable, that the 2003 NESHAP provides an ample margin of safety to protect public health, and that no additional standards are necessary to prevent an adverse environmental effect.

A two-step evaluation approach was used, similar to the approach applied in the Benzene NESHAP, to determine whether or not risks are acceptable and to determine whether the 2003

standards provide an ample margin of safety to protect public health or needed to be revised to meet this goal. We considered health risk and other health information; information and additional factors relating to the appropriate level of control were also considered – e.g., cost and economic impacts of controls, technological feasibility, uncertainties, and any other relevant factors.

Table 2 below provides a summary of the results of the inhalation risk assessment for the source category conducted for the January 2021 proposal. More detailed information on the risk assessment can be found in the *National Emission Standards for Hazardous Air Pollutants: Mercury Cell Chlor-Alkali Plants Residual Risk and Technology Review* supporting document, available in the docket for this action (Docket No.: EPA-HQ-OAR-2020-0560-0014).

**Table 2. Inhalation Risk Assessment Summary for the Mercury Cell Chlor-Alkali Plants¹
Source Category**

Risk Assessment	Number of Facilities ²	Maximum Individual Cancer Risk (1-in-1 million) ³	Estimated Population at Increased Risk of Cancer \geq 1-in-1 Million	Estimated Annual Cancer Incidence (cases per year)	Maximum Chronic Noncancer TOSHI ⁴	Maximum Screening Acute Noncancer HQ ⁵
Baseline Actual Emissions						
Source Category	2	0.004	0	0.0000003	0.05 (respiratory)	2 (REL) 7E-4 (AEGL2)
Facility-Wide	2	0.3	0	0.0001	0.05 (respiratory)	-
Baseline Allowable Emissions						
Source Category	2	0.004	0	0.0000003	0.05 (respiratory)	-

¹ Based on actual and allowable emissions.

² When the risk assessment was completed in mid-2020, there were 2 operating facilities in the mercury cell chlor-alkali source category and both were subject to 40 CFR part 63, subpart IIII. However, in late 2020 one of those facilities converted to a non-mercury process. Therefore, currently only one operating facility remains in the source category.

³ Maximum individual excess lifetime cancer risk due to HAP emissions from the source category.

⁴ Maximum TOSHI. The target organ with the highest TOSHI for the source category is the respiratory system.

⁵ The maximum estimated acute exposure concentration was divided by available short-term threshold values to develop an array of HQ values. The acute HQ shown was based upon the lowest acute 1-hour dose-response value, the REL for mercury (elemental). When an HQ exceeds 1, we also show the HQ using the next lowest available acute dose-response value.

As shown in the table above, for the Mercury Cell Chlor-Alkali Plants source category, the maximum cancer risk to the individual most exposed is less than 1-in-1 million based on actual emissions and allowable emissions. The estimated incidence of cancer due to inhalation exposures for the source category is 0.0000003 excess cancer cases per year, or one excess case every 3 million years. No one is exposed to cancer risk greater than or equal to 1-in-1 million based upon actual and allowable emissions. We estimated that the maximum chronic noncancer TOSHI from inhalation exposure is less than 1 (0.05 [respiratory]). For both actual and allowable emissions, respiratory risks were driven by chlorine emissions from the mercury cell building.

Based on our refined screening analysis of reasonable worst-case acute exposure to actual emissions from the category, the facility exceeded an HQ of 1 (the HQ was 2), when compared to the 1-hour REL for mercury (elemental). As discussed in section III.C.3.c of the 2021 proposal preamble, we used an acute hourly multiplier of 10 for all emission processes. For this HAP, there are no AEGL-1 or ERPG-1 values for comparison, but AEGL-2 or ERPG-2 values are available. For elemental mercury, when the maximum off-site concentration is compared with the AEGL-2 and ERPG-2, the maximum acute noncancer HQ is well below 1 (0.0007). With regard to multipathway exposures, HAP known to be persistent and bioaccumulative in the environment (PB-HAP) emissions (based on estimates of actual emissions) were reported from both facilities in the source category with both exceeding the Tier 1 non-cancer screening threshold emission rate for mercury. A Tier 2 screening analysis was conducted, and the facility did not have a screening value (SV) greater than 1 for any scenario (the fisher and farmer had the highest SV at 0.4). There are no carcinogenic PB-HAP emitted from the source category, so there are no cancer SVs to report.

Considering all the health risk information and factors noted, the proposed determination was that the risks are acceptable and that no additional standards are necessary to prevent an adverse environmental effect. Under the ample margin of safety analysis, we evaluated the cost and feasibility of available control technologies and other measures that could be applied to further reduce the risks (or potential risks) due to emissions of HAP from the source category. After careful consideration of these options, since the risks due to mercury emissions were already low, we did not propose any additional standards for mercury under CAA section 112(f).

2. How did the risk review change for the Mercury Cell Chlor-Alkali Plants source category?

We made no changes to either the risk assessments or our determinations regarding risk acceptability, ample margin of safety, or adverse environmental effects for the Mercury Cell Chlor-Alkali Plants source category since the proposal was published on January 8, 2021. We are finalizing the risk review as proposed (86 FR 1362, January 8, 2021).

3. What key comments did we receive on the risk review, and what are our responses?

The only comment received regarding the risk assessment was that one commenter agreed with our assessment that emissions were low and that risks were low and at acceptable levels.

4. What is the rationale for our final approach and final decisions for the risk review?

As noted above, in 2021, we proposed that the 2003 Mercury Cell Chlor-Alkali NESHAP provides an ample margin of safety to protect public health without any revisions. Other than a general agreement with the results, there were no specific comments submitted on the risk review approach, results, or decision. Therefore, we are finalizing the proposed determination that the risks are acceptable, that the 2003 rule provides an ample margin of safety to protect public health and that no additional standards are necessary to prevent an adverse environmental effect.

B. Non-Mercury Option for the Mercury Cell Chlor-Alkali Plants Source Category

1. What did we propose related to the non-mercury option for the Mercury Cell Chlor-Alkali Plants source category?

We addressed this issue in all three of our proposed rules issued following promulgation of the 2003 rule, in response to the 2004 petition for reconsideration of the 2003 rule's consideration of section 112(d)(2) and (3) beyond-floor options and most recently as part of the technology review under section 112(d)(6). In the 2021 proposal, we further considered our two prior proposals, but did not re-propose the option to require non-mercury production technology for existing sources, which has been the requirement for new and reconstructed mercury cell chlor-alkali production sources since the rule was originally promulgated in 2003. This option was considered both as part of the technology review under the authority of section 112(d)(6) and as a "beyond-the-floor" option under sections 112(d)(2) and (3). As explained in the several proposed rules, selecting this option would eliminate all mercury emissions by forcing the remaining facility to either convert to a non-mercury technology or close its mercury cell chlor-alkali operations. While we did not in 2021, re-propose this option under either 112(d)(2) and (3) or (d)(6), we described this option in detail in the proposed rule's *Federal Register* (FR) notice published on January 8, 2021 (86 FR 1362), including the estimated capital costs, annualized costs and cost effectiveness if it were to be adopted, and we specifically solicited comments, data, and other information regarding this proposed decision. Furthermore, in the January 2021 FR document, we discussed and referred to the previous 2011 proposed rule in which the EPA also analyzed expected capital costs, annualized costs and cost effectiveness of the then proposed non-mercury option but for which EPA had not taken final action at the time of the 2021 proposal.

2. What changed related to the non-mercury option for the Mercury Cell Chlor-Alkali Plants source category?

After consideration of public comments received on the 2021 proposed rule and further assessment of the expected costs, we have changed our 2021 proposed decisions under sections

112(d)(2) and (3) and (6) regarding the non-mercury option and the final rule includes an amendment that prohibits mercury emissions from existing mercury cell chlor-alkali plants as was proposed in 2011 under section 112(d)(2) and (3). Existing mercury cell chlor-alkali plants will have three years to comply with this requirement.

3. What key comments did we receive on the non-mercury option, and what are our responses?

Comment: One commenter remarked that the EPA must revise MACT standards when it finds there have been developments in processes, products, or control technologies under CAA section 112(d)(6) to reduce emissions to the maximum achievable degree. They further stated that it is achievable for facilities to switch to membrane cell technology, as demonstrated by the number of facilities that have already made this switch since adoption of the 2003 rule, which would eliminate emissions of mercury. The commenter also stated that because the EPA is also responding to the 2004 petition for reconsideration in this rulemaking regarding whether eliminating mercury emissions is achievable, the EPA must either promulgate a zero-emissions standard or determine that such a standard is not achievable. The commenter added that under the CAA, the EPA cannot refuse to set such standards because it does not think they are “reasonable,” but it must set them at the maximum degree of reduction that is achievable.

Response: We agree that it is technically achievable for facilities to switch from mercury cell to membrane cell technology, as there are many instances of successful switches spanning the last three decades. We also agree that it is technologically achievable, as a section 112(d)(2) and (3) beyond-floor measure, to require elimination of mercury emissions from the single remaining operating existing source. However, we disagree with the commenter’s assertion that the EPA must promulgate a standard solely based on technical achievability in the context of section 112(d)(6). Section 112(d)(6) requires the EPA to review and revise emission standards as necessary, considering developments in practices, processes, or control technologies, but does not require revisions for all developments that are technically achievable. Other factors are considered, including cost, economic impacts, physical limitations of the site, etc.

Nevertheless, based on consideration of public comments, and after reassessing the costs and feasibility of converting to the non-mercury technology, we have determined that the non-mercury option is technically and economically feasible and is cost effective and therefore reasonable to impose under both sections 112(d)(2) and (3) and (d)(6). As explained elsewhere in this preamble, we estimate the annualized costs to convert to a membrane process would be \$2.7 million per year (2019 dollars), with cost-effectiveness of \$21,500 per pound of reduced mercury emissions. This cost effectiveness is within the range of cost effectiveness values the EPA has accepted historically for mercury reduction. For example, in the 2012 Mercury and Air Toxics (MATS) final rule, the EPA finalized a beyond-the-floor standard for mercury with a cost effectiveness of \$22,496 per pound (based on 2007 dollars), which would be approximately \$27,500 per pound based on 2019 dollars. Furthermore, we conclude that conversion to a non-mercury process is clearly feasible, as demonstrated by the six mercury cell facilities in the U.S. that have converted to the non-mercury membrane process since the year 2000. Additionally, non-mercury chlorine production accounts for more than 98% of chlorine production in the U.S.

Comment: One commenter maintained that the EPA's vague characterizations of costs and its ignorance of current costs for the one remaining facility to switch to membrane technology did not constitute an excuse for failing to determine whether the measure is achievable. The commenter said that the Agency has had 17 years since the 2004 petition for reconsideration to gather the data it needs, and any uncertainty about costs due to the EPA's failure to gather the necessary data is not a lawful or reasonable basis for not setting a zero-emissions standard for mercury.

Response: We disagree with the commenter's characterization of our assessment of the costs of conversion. While the EPA did not commission a comprehensive detailed study to assess the costs specifically for the conversion of the West Virginia mercury cell chlor-alkali unit to convert to membrane cells, the EPA did update the previous analysis to incorporate new information to ensure that the estimated costs reflected "current" costs expected to be incurred

for a conversion. The commenter did not mention or provide any specific comments on the updated analysis.

The foundation for the analysis was the series of evaluations conducted by the EPA in 2008 through 2010, in support of the 2008 and 2011 proposed rules. The EPA first presented our evaluation of impacts of requiring conversion of all operating mercury cell chlor-alkali production plants to non-mercury technology in 2008. Based on comments received after the June 11, 2008, proposed amendments (73 FR 33258), we updated this analysis and released it for public review in June 2009. Comments were received on this revised analysis, and a second revision was released for public review in September 2009. The EPA received comments on this second revision of the analysis and issued another revision in April 2010. Therefore, the 2010 analysis, which was based on extensive research by the EPA, had undergone three rounds of public review by the environmental community and the industry before it was relied upon to support the 2011 proposed rule.

The 2020 update to the 2010 conversion cost analysis involved several steps to ensure that the cost estimates were current. These included converting 2010 capital cost estimates, the savings associated with compliance with the mercury cell room monitoring program, and the electricity savings, to a 2019 base year. It also included incorporation of the reported costs of the latest conversion of a mercury cell facility in the U.S., which was the Ashta facility in Ohio that completed its conversion in late 2020. In addition, the 2020 analysis considered the conversion cost estimate specifically provided for the West Virginia facility by the previous owner in public comments on the 2011 proposal and updated that estimate to base year 2019.

Comment: One commenter (the owner of the single operating mercury cell facility) noted that the facility has not revisited the cost associated with converting to a non-mercury process since 2012, but they believe it is significantly higher than the EPA's estimate of \$69 million.

Response: While the EPA recognizes that the facility may not have recently performed an update of the cost to convert their mercury cell unit to membrane technology, we believe there is

sufficient information available to obtain a reasonable estimate of this cost. In our 2020 analysis, we estimated the conversion costs using three approaches. One was to base the capital cost of conversion solely on the highest cost factor (dollars per ton of chlorine production capacity) from the conversions considered in the 2010 analysis (after adjusting to a 2019 base year). The second approach used the cost factor calculated from the reported cost for the most recent conversion at the Ashta facility in Ohio. The cost factor for this Ashta conversion was over 20 percent higher than the highest cost factor from the previous conversions after updating them to a 2019 base year. The third approach was to incorporate the Ashta factor into an average of all the cost factors for conversions in the U.S. since 2003. These factors, which were in units of dollars per ton of chlorine production capacity, were then applied to the site-specific production capacity of the West Virginia mercury cell unit. The resulting estimates of the capital cost of conversion of the West Virginia facility using these three approaches were approximately \$76 million, \$92 million, and \$58 million, respectively (in 2019 dollars). Given all the site-specific factors that are inherent in the cost of conversion, we do not believe it is appropriate to base an estimate on the factor from the conversion of a single facility. So, we did not select either of the first two options described above. We also did not want to potentially bias our estimate low, so we did not select the third option (average factor for five facilities that have converted since 2003). Therefore, we calculated the average cost between the three options (\$69.3 million) and selected that average as our estimated cost of conversion for our consideration for our 2021 proposal. Considering the inflation that has occurred since 2019, the updated capital cost of conversion estimate is \$80.7 million (in 2021 dollars). Our confidence in this estimate was bolstered by a comparison of this result with the estimate that was specifically provided earlier in 2011 for the West Virginia facility by its previous owner. This estimate, when converted to 2019 to be consistent with the year for our cost analysis, was \$69.4 million (or \$80.8 million for 2021 base year). Since the commenter did not provide any updated information in response to the 2020 analysis and 2021

proposed rule, we continue to maintain that our estimate is a reasonable estimate of the capital costs of converting the West Virginia mercury cell unit to membrane cell technology.

Comment: One commenter stated that the EPA's proposal ignored the U.S. obligations under the Minamata Convention on Mercury, which is a global treaty that requires the phase-out of manufacturing processes using mercury. The commenter remarked that under Article 5(2), the phase-out date for chlor-alkali production using mercury is 2025, unless an exemption is filed. The commenter noted that an exemption was filed for these processes in the U.S., and the phase-out date is now 2030. According to the commenter, since companies are typically given three years to comply with MACT standards, a final rule requiring the phase-out of mercury would be required to be promulgated by the end of 2027 for the U.S. to meet its obligations under the Minamata Convention. The commenter stated that since a final rule in 2021 that does not require elimination of mercury would put the next 8-year review completion time at the end of 2029 at the earliest, the U.S. will then be out of compliance with the Minamata Convention. The commenter stated that the EPA must issue a new proposal explaining how the 2030 phase-out deadline will be met.

Response: We agree with the commenter's summary of the U.S. obligations under the Minamata Convention agreement. We also agree that a NESHAP standard adopted under the authority of section 112 of the CAA is a valid approach to meet this obligation. In fact, during treaty negotiations, the U.S. specifically concluded that CAA section 112 gives the EPA the authority to require elimination of mercury emissions. We also agree with the commenter's conclusions about the timing of when a NESHAP would need to be promulgated. Assuming a 3-year compliance timeframe would be needed for a final rule requirement that prohibits mercury emissions, a section 112 NESHAP would need to either be finalized as part of this review, or a separate "out of cycle" review would be needed prior to 2027 to meet the current phase-out date of 2030 required under the Convention. (More information regarding the Minamata Convention is available at: <https://www.mercuryconvention.org/en/about>).

Comment: One commenter remarked that the environmental impacts the EPA cites as a reason not to require a zero-emission standard for mercury are actually environmental benefits. The commenter stated that the 1,000 pounds of mercury that are discharged to the environment every year would be eliminated. The commenter also stated that the EPA ignored the fact that mercury-contaminated piping and equipment must be removed at some point, and it is just a question of when. The commenter added that the costs of storing and moving mercury to a secure location is not a new expense, as the facility made a choice to continue operations with mercury past the date the Mercury Export Ban of 2008 (Public Law 110-414) went into effect in 2013, and it determined at that point to assume those costs.

Response: We estimate that the non-mercury requirement would eliminate just over 125 pounds of mercury released to the atmosphere per year. Furthermore, at proposal we stated the following: “The EPA also examined the non-air impacts associated with switching from mercury cell to non-mercury cell processes. For 2019, the West Virginia facility reported a total of 898.1 pounds of non-air mercury releases. This consists of 9 pounds to streams/water bodies, 883.3 pounds to Resource Conservation and Recovery Act, Subtitle C Landfills, and 5.8 pounds to other offsite sources. All these releases would be eliminated with the conversion to non-mercury cell processes.” (86 FR 1382-1383)

We also acknowledge the point made by the commenter regarding the costs associated with moving the mercury recovered from a conversion and storing it. Even without a regulatory requirement to eliminate mercury emissions from existing sources, the mercury cell unit would eventually reach the end of its useful life and be shut down or replaced. Since the standards for new and reconstructed sources in subpart IIII prohibit mercury emissions, the owner or operator could not replace the unit with another mercury cell process. Even without this standard, which has been in place since 2003, it is reasonable to assume that a new mercury cell facility would not be built. Prior to the promulgation of subpart IIII, the use of the outdated mercury cell technology had been declining for decades and no new mercury cell facility had been constructed

since the early 1970s. Hence, we agree that the owner most likely recognized this future cost when the decision was made not to convert prior to the effective date of the mercury export ban. Therefore, we conclude that the costs of the mercury storage should not be attributed to the non-mercury option under this rulemaking.

The cost of this mercury storage was estimated to be just over \$53,000 per year in our 2020 conversion cost analysis. Removing these mercury storage costs lowers the overall estimated annual cost, which includes the annualized capital cost, electricity savings and reduced compliance costs from \$2.77 million to just over \$2.7 million. This improves the cost effectiveness from just over \$22,000 per pound of mercury released to the air to around \$21,500 per pound. In addition, as noted above, it also results in the reduction of around 900 pounds of mercury releases per year to other media.

Comment: One commenter registered agreement with the EPA's proposal to not require the elimination of mercury and stated that the NESHAP should not include a zero-mercury standard at this time. The commenter added that the single operating facility operates with low mercury emissions and pointed out that risks due to mercury are already low and at acceptable levels. However, another commenter expressed support for a zero-emission policy and a switch to non-mercury polluting processes at the West Virginia facility. This commenter stated that while the current mercury emissions may be in compliance with the 2003 NESHAP's standards, effort should be made to increase sustainable industrial processes if possible. According to the commenter, considering the cost-benefit analysis, it would be more beneficial for the chlor-alkali plant to transition sooner rather than later because the plant will eventually have to transition or adopt a zero-mercury emission policy as our green infrastructure increases. The commenter added that when considering pollution, especially mercury, the goal should be zero, regardless of its economic impact. Additionally, the commenter supported policies that are more proactive in tackling pollution because accidents can happen and they're typically more of an economic burden than taking proactive measures. Further, the commenter stated that even if the data shows

no benefits to human health or the environment from further reducing the mercury emissions at the West Virginia plant, it would ultimately be one step closer to the national transition to cleaner, more sustainable industry.

Response: As discussed above in section IV.A of this preamble, the first commenter is correct that our conclusion of the section 112(f) residual risk assessment was that health risks due to emissions of HAP from the Mercury Cell Chlor-Alkali Plants source category are acceptable, that the 2003 NESHAP provides an ample margin of safety to protect public health, and that no additional standards are necessary to prevent an adverse environmental effect. While the recommendations of the second commenter generally lack any statutory authority to implement measures for a “green infrastructure” to “transition to cleaner, more sustainable industry,” their point about a transition to zero mercury pollution is recognized.

The residual risk assessment conducted under the authority of section 112(f) is focused on the local impacts (within 50km) directly resulting from HAP emissions from a NESHAP affected source. This type of assessment does not necessarily capture all the potential risks or impacts associated with mercury emissions. Mercury is a highly neurotoxic contaminant that enters the food web as a methylated compound, methylmercury. The contaminant is concentrated in higher trophic levels, including fish eaten by humans. Mercury is emitted to the air from various anthropogenic and natural sources. These emissions transport through the atmosphere and eventually deposit to land or water bodies. This deposition can occur locally, regionally, or globally, depending on the form of mercury emitted and other factors such as the weather. The form of mercury emitted from the single remaining operating plant is estimated to be about 98 percent elemental and two percent divalent mercury. Gaseous elemental mercury can be transported very long distances, even globally, to regions far from the emissions source (becoming part of the global “pool”) before deposition occurs. Inorganic ionic (divalent) mercury has a shorter atmospheric lifetime and can deposit to land or water bodies closer to the emissions source. Furthermore, elemental mercury in the atmosphere can undergo transformation

into ionic mercury, providing a significant pathway for deposition of emitted elemental mercury (UNEP, Global Mercury Assessments, available at: <https://www.unep.org/resources/publication/global-mercury-assessment-2018>).

Therefore, even though the estimated risks due to the mercury emissions are low based on our residual risk assessment, and the results of the residual risk assessment do not necessitate additional regulation to meet the requirements of CAA section 112(f), we agree that there is merit in eliminating mercury emissions where it is technically and economically feasible to do so, consistent with other statutory authority and requirements. And, as the second commenter points out, this is certainly possible in this situation, and the plant would need to ultimately eliminate mercury emissions anyway in order for the United States to meet its obligations under the Minamata Convention.

4. What is the rationale for our final approach for the non-mercury option?

As noted above, we are finalizing an amendment that prohibits mercury emissions from existing mercury cell chlor-alkali plants. Our rationale for this decision is based on the following points. First, our re-evaluation of the costs and associated emission reductions reveal that the cost effectiveness is within the range considered reasonable by the EPA for mercury and based on our economic analysis, the estimated annualized costs are only about 0.04 percent of the annual revenue of the facility's ultimate parent company in 2020 and therefore the amendment is reasonable as a beyond-floor standard under section 112(d)(2) and (3). Second, this action will also eliminate the non-air releases that occur from the remaining mercury cell plant. Third, using the authority under section 112(d) of the CAA at this time is the most effective mechanism to ensure the U.S. complies with the Minamata Convention agreement by the 2030 deadline. Finally, as mentioned above, we conclude that conversion to a non-mercury process is clearly feasible and has been shown to be a development in practices, processes and control technologies under section 112(d)(6), as demonstrated by six facilities in the U.S. that have converted to the

non-mercury membrane process since the year 2000. Some of these points are discussed in more detail below.

In response to a comment discussed above, we adjusted the annual costs to remove the mercury storage cost. This resulted in the cost effectiveness of the non-mercury option decreasing slightly to \$21,500 per pound of mercury emission reduction. While this cost effectiveness is near the upper end of the range of cost effectiveness values the EPA has accepted historically for achievable mercury control, the EPA has previously determined that cost effectiveness values higher than this are acceptable and achievable. For example, in the 2012 MATS final rule, the EPA finalized a beyond-the-floor standard for mercury of \$22,496 per pound (based on 2007 dollars), which would be about \$27,500 per pound based on 2019 dollars. Therefore, we conclude that the cost effectiveness of \$21,500 per pound of mercury emissions reduction is reasonable especially given the other factors described above, and we have decided to finalize the amendment to prohibit mercury emissions from existing sources as an achievable beyond-floor measure under section 112(d)(2) and (3).

As noted above, we evaluated the economic impacts of this amendment and determined that the impacts are not substantial, with the annualized costs being less than 0.04 percent of sales for the subject facility's ultimate parent company (Westlake). We determined that the environmental benefit of the non-mercury option warranted these economic impacts.

The primary reasons provided at proposal for discussing but not re-proposing the non-mercury option were related to costs, cost effectiveness, and uncertainties. For example, in the January 2021 proposal FR document, the EPA stated that "first, mercury emissions are based on calculations and assumptions regarding the facility's emissions (no test data are available for this facility), and second, because there are uncertainties with the cost estimates from the 2011 proposal as being transferable to the remaining facility. In the 2011 proposal, the estimated cost effectiveness was \$20,000 per pound for the industry (see 76 FR 13852, March 14, 2011), but

this was substantially based on the studies conducted for the two no longer operating sources.”

(86 FR 1378-1379)

While no additional emissions data based on testing was submitted in response to the 2021 proposal, we point out that subpart IIII requires that measurements of the stack emissions be taken. The estimates reported by the West Virginia facility that were used in our analyses for fugitive emissions (121.4 pounds per year) are lower than the average level of 362 pounds per year per plant found during the extensive study conducted by the EPA prior to the 2008 proposal (see description in the June 11, 2008, proposal at 73 FR 33263 – 33266). Therefore, if the confidence is lacking regarding these estimates, it is realistic to consider that emissions, and thus emission reductions, would likely only be higher. This would result in improved cost effectiveness values (i.e., the requirements would be more cost effective), providing further justification for our decision to finalize the non-mercury option.

In the 2021 proposal we stated, “Based on consideration of the updated costs and cost effectiveness and uncertainties, and given the passage of time, and the fact that the cost-effectiveness data and analysis done in 2011 were based on two facilities that are no longer operating, we question whether those 2011 analyses would still be transferable to the one remaining operating facility.”(86 FR 1378) Upon additional consideration, we have determined that this point is not relevant to the decision regarding the cost effectiveness of a non-mercury standard for the West Virginia facility. In 2011, we calculated an average cost effectiveness for the conversion of the four mercury cell facilities operating at that time. The range was between \$13,000 to \$31,000 per pound for the four individual facilities. However, the estimated cost effectiveness values for the two facilities that closed prior to 2020 is not determinative of the estimate of the conversion cost for the West Virginia facility. Also, the cost effectiveness for these two facilities does not compel what the EPA considers a reasonable cost effectiveness level for mercury. Therefore, we now reject the two major points used as rationale in the 2021 proposal for not accepting and proposing the non-mercury option. We are confident that the

mercury emissions estimates for the West Virginia facility are reliable and, if anything, are underestimated. We also have determined that the cost estimate is reasonable and applicable and could be even more cost effective than presented here due to potential underestimation of the emissions. Consequently, the non-mercury option is a reasonable beyond-floor measure under section 112(d)(2) and (3), and the fact that six mercury cell facilities have converted to non-mercury membrane technology since 2000 and only a single mercury cell source remains at a facility that already has two non-mercury chlorine production units shows that it is necessary to revise our existing source standard to take into account developments in practices, processes and control technologies.

Regarding the Minamata Convention on Mercury, this is a global treaty to protect human health and the environment from the adverse effects of mercury. It was agreed at the fifth session of the Intergovernmental Negotiating Committee on mercury in Geneva, Switzerland on January 19, 2013, and adopted later that year on October 10. The Minamata Convention entered into force on August 16, 2017.

Major highlights of the Minamata Convention include a ban on new mercury mines, the phase-out of existing ones, the phase out and phase down of mercury use in a number of products and processes, control measures on emissions to air and on releases to land and water, and the regulation of the informal sector of artisanal and small-scale gold mining. The Convention also addresses interim storage of mercury and its disposal once it becomes waste, sites contaminated by mercury, and health issues.

Under the Minamata Convention, the U.S. has specifically addressed mercury cell chlor-alkali production. For example, in the registration for an extension of the mercury phase out deadline from 2025 to 2030, the U.S. stated the following:

“Pursuant to Article 6, paragraph 1 of the Minamata Convention on Mercury, the United States hereby registers for an exemption from the phase-out date listed in Annex B for the use of

mercury in chlor-alkali production.”² The United States also provides the following statement explaining the need for the exemption:

“The United States supports the phase-out of mercury use in chlor-alkali production facilities. It has implemented domestic strategies to encourage a timely transition to mercury-free alternative technologies with a view to phasing out all mercury use in domestic chlor-alkali production facilities. New or reconstructed chlor-alkali production facilities in the United States are already effectively prohibited from using mercury under section 112 of the Clean Air Act. See 40 C.F.R. 63.8190. Most mercury cell chlor-alkali facilities in the United States have already closed or converted. While there were 14 such facilities in 1998, only two remained as of late 2013. The United States will, pursuant to Article 6, paragraph 7, withdraw this exemption if that becomes possible prior to its expiration date.”³

Therefore, the U.S. is committed to phasing out all mercury emissions in domestic chlor-alkali facilities by 2030. The EPA is not aware of any plans by the owner of the lone remaining mercury cell chlor-alkali facility in West Virginia to close or convert their mercury cell facility before 2030. Therefore, we have determined that it is necessary to require this action to ensure the facility converts or closes the mercury cell chlor-alkali production process in order to eliminate mercury emissions and section 112 of the CAA provides an appropriate regulatory mechanism to enact such a requirement to eliminate emissions. The two main options regarding timing are: (1) promulgate a non-mercury standard at this time under section 112(d)(2) and (3) and/or section 112(d)(6); or (2) promulgate a non-mercury standard by fall 2027 (i.e., before the next 8-year cycle for a technology review required by section 112(d)(6)).

As pointed out by commenters, the next 8-year review will not be required until 2030. If a non-mercury standard was promulgated in 2030 and included the 3-year compliance date allowed by CAA section 112, the phase-out would not occur in time to comply with the 2030

² <https://www.mercuryconvention.org/en/parties/exemptions>

³ Ibid.

deadline. We do not think it is prudent to plan a separate “out of cycle” review to promulgate a non-mercury standard in 2027, especially since the review shows that the non-mercury standard is technologically feasible, cost effective and will not impose significant economic impacts at this time, and there is no reason to think a decision would be any different in 2027. Therefore, we concluded that the best option to ensure compliance with the Minamata Convention is to promulgate a non-mercury standard at this time.

We recognize that we did not specifically propose this option in the January 2021 proposal. However, we did include it as an option that was considered and described it in detail, we provided our analysis of this option and specifically requested comment on the option. Specifically, we stated the following:

“However, we are soliciting comments, data, and other information regarding these proposed decisions, including data and information regarding the costs, cost effectiveness, non-air, and economic impacts and other relevant information regarding whether the NESHAP should include a non-mercury standard as either a beyond-the-floor MACT standard or a revised standard under the technology review, and whether the proposed work practices for chlorine emissions and proposed amendments to the mercury work practices would be necessary if a non-mercury standard were to be adopted.”

EPA also stated that “We intend to consider any such submitted data and information, in addition to the data and information contained in the records for the 2008 and 2011 proposals and in this proposal, in reaching final conclusions under CAA sections 112(d)(2) and (6) regarding a non-mercury standard.” (86 FR 1383)

Furthermore, the EPA proposed the non-mercury option in 2011 and referred to this 2011 proposal in the January 2021 FR document. Therefore, we provided sufficient notice of the potential that we would finalize a non-mercury option, and we are finalizing the non-mercury requirement based on a logical outgrowth of comments on our proposal and the record that public commenters had an opportunity to review and address.

C. Technology Review for the Mercury Cell Chlor-Alkali Plants Source Category

1. What did we propose pursuant to CAA section 112(d)(6) for the *Mercury Cell Chlor-Alkali Plants* source category?

Pursuant to CAA section 112(d)(6), we proposed amendments to the rule that would have required the combination of both a cell room monitoring program to continuously monitor mercury vapor in the cell room and a suite of equipment standards and work practices to reduce fugitive mercury emissions. This is different from the NESHAP promulgated in 2003, which required either the equipment standards and work practices or the cell room monitoring program. As described above, we also evaluated the non-mercury option under our section 112(d)(6) technology review.

2. How did the technology review change for the *Mercury Cell Chlor-Alkali Plants* source category?

As discussed above in section IV.B, we changed our decision related to the non-mercury option and are promulgating a prohibition of mercury emissions from the source category. The result of this final amendment prohibiting mercury emissions will be that there will no longer be any operating mercury cell chlor-alkali plants in the U.S. after May 6, 2025.

3. What key comments did we receive on the technology review, and what are our responses?

The only comment received on our proposed technology review, other than those related to the non-mercury option discussed above in section IV.B.3, was one from the facility that clarified that the existing continuous monitor analyzers for mercury at the facility are capable of detecting mercury concentration of $0.1 \mu\text{g}/\text{m}^3$, which would meet the EPA's proposed detection requirements.

4. What is the rationale for our final approach for the technology review?

The rationale for our final decision regarding the non-mercury option is discussed above in section IV.B.4. Regarding the cell room monitoring program and equipment and work practice standards to reduce fugitive mercury emissions, the facility complies with the fugitive mercury

standards by operating a continuous cell room monitoring program in accordance with paragraph 63.8192(g) as an alternative to the equipment standards and work practices in paragraphs 63.8192(a) through (d). However, while not required to do so under the NESHAP promulgated in 2003, the facility also implements those equipment standards and work practices. Therefore, the EPA determined that the combination of implementing a cell room monitoring program and performing work practices constitutes a development in emissions control practices and is finalizing the proposed requirement that both a cell room monitoring program and equipment and work practices be implemented during the period of up to 3 years before the facility converts the mercury cell process to a non-mercury process or closes the mercury cell process.

D. Amendments pursuant to sections 112(d)(2) and (3) and (h) for the Mercury Cell Chlor-Alkali Plants source category

1. What did we propose pursuant to CAA section 112(d)(2) and (3) and (h) for the Mercury Cell Chlor-Alkali Plants source category?

Pursuant to CAA sections 112(d)(2) and (3) and (h), in 2021 we proposed amendments to the rule that would have required a leak detection and repair program to identify chlorine equipment leaks in the cell room and throughout the other parts of the mercury cell chlor-alkali production facility affected source that handle and process the chlorine gas produced. The proposed rule would have also required that chlorine monitors be installed and operated continuously throughout the affected source and that each time one of these sensors measured a chlorine concentration of 2 ppmv or greater, a complete inspection for leaks of all equipment containing 5 percent chlorine by volume would have been required within 1 hour of detection.

In addition, we evaluated the beyond-the-floor non-mercury option under our consideration of section 112(d)(2) and (3); however, we did not propose the non-mercury standard in the January 8, 2021 proposal.

2. How did the decision related to CAA section 112(d)(2) and (3) change for the Mercury Cell Chlor-Alkali Plants source category?

As discussed above in section IV.B, we changed our decision related to the non-mercury option and are promulgating a prohibition of mercury emissions from the source category. The result of this final amendment prohibiting mercury emissions will be that there will no longer be any operating mercury cell chlor-alkali plants in the U.S. after May 6, 2025.

3. What key comments did we receive on our proposed decision related to CAA sections 112(d)(2) and (3) and (h), and what are our responses?

As discussed above in section IV.B.3, comments were received regarding the proposed determination not to require the non-mercury option as a beyond-the-floor requirement. Comments were also received related to the proposed fugitive chlorine requirements. In addition, comments were received claiming that standards should have been proposed for emissions of HCl. These comments, along with responses from the EPA, are provided below in this section.

Comment: The single operating facility provided several comments regarding the proposed requirements to reduce chlorine emissions. While they corrected the EPA's assumption that the cell room was under negative pressure, they noted that most of the equipment containing chlorine gas is under negative pressure, which would be excluded from the proposed leak detection requirements. They noted that the facility already complies with most of the proposed fugitive chlorine requirements, and they explained how they would comply with the additional requirements. They agreed that the proposed olfactory observations are appropriate versus visual or auditory inspections, due to the low odor threshold of chlorine. They did, however, register concern about the chlorine leak repair requirements, noting that final repairs to leaks from some causes may take more than one day to complete, as required in the proposal. They also provided responses to the EPA's requests for comments regarding the proposed requirements for continuous chlorine sensors and the proposed 2 parts per million by volume (ppmv) action level and averaging time. In response to the EPA's request for comment regarding whether the EPA should specify sensor placement locations, they expressed concern about placing chlorine sensors in the cell room, as they stated that the high magnetic field in the cell room has

historically caused unreliable transmitter responses. They indicated that, if the EPA finalized a requirement to place chlorine sensors in the cell room, additional time would be needed to comply with the standard, as the facility would need to evaluate whether the use of a chlorine sensor(s) in the cell room is technically feasible and, if feasible, to procure and install the sensors.

Response: The EPA appreciates the effort provided by the commenter to carefully review the proposed fugitive chlorine requirements, to provide thoughtful comments, and to put forth preliminary ideas on how they would comply. We also appreciate the concerns raised about the repair timing requirement and the placement of chlorine sensors in the cell room. Based on these comments, we have revised the final requirements to add time to make repairs, which would allow time to obtain equipment that is not kept onsite, by increasing the time for final repairs to be made from 24 to 72 hours. Further, based on these comments and the technical feasibility of placing sensors in certain locations, we have not added requirements stipulating sensor locations in the final rule. Finally, we agree that an action level for equipment inspections based on a single sensor reading may not be indicative of a problem that warrants special investigation. Accordingly, we have revised the action level that triggers an inspection of all chlorine-containing equipment to be detection by a sensor of a one-hour average chlorine concentration of 2 ppmv or greater.

Comment: One commenter stated that the EPA must set emissions standards for HCl. The commenter contended that even if the HCl emissions are from direct synthesis HCl production units, these units are part of the mercury cell chlor-alkali plant and must be regulated. The commenter stated that these units would be affected sources because they are “cell rooms and ancillary operations used in the manufacture of product chlorine, product caustic, and by-product hydrogen at a plant site” and “processes and associated operations needed for mercury recovery from wastes at a plant site.”

Response: We disagree with the commenter's rationale of why the direct synthesis HCl production units would be part of an affected source under subpart IIII. They are not part of the cell room or the ancillary operations used in the manufacture of product chlorine, product caustic, or by-production hydrogen. In fact, the HCl production units are downstream operations from the chlor-alkali process, as they use the product chlorine and by-product hydrogen to create HCl. Additionally, these units are not associated with the processes needed for the recovery of mercury.

While not cited by the commenter, the EPA has previously considered direct synthesis HCl units co-located with chlor-alkali plants to be part of the chlor-alkali plant. In the July 3, 2002, proposal for the chlorine production source category, the EPA stated "Since chlor-alkali processes produce both chlorine and hydrogen, it is common for a direct synthesis HCl production unit to be incorporated into a chlor-alkali facility. Therefore, we consider these direct synthesis HCl production units to be a part of the chlor-alkali facilities." (67 FR 44713). The HCl (and chlorine) emissions from the co-located direct synthesis HCl plants were included in the risk assessment that led to the EPA's decision in 2003 not to develop any NESHAP for non-mercury cell chlor-alkali plants and to delete the non-mercury subcategory. Further, because these units were considered part of the deleted non-mercury cell chlorine production subcategory, they were specifically exempted from the HCl NESHAP, 40 CFR subpart NNNNN, at 63.8985(d).

At the West Virginia facility, there are three chlor-alkali units: the mercury cell unit and two diaphragm cell units. According to the air permit for the facility, the diaphragm cell units produce approximately four times as much chlorine as the mercury cell unit. Therefore, if the HCl production units were assigned to one of the chlorine production subcategories based on the contribution of the chlorine and hydrogen contributed, they would be considered part of the non-mercury cell subcategory of chlor-alkali plants. In addition, when the EPA finalized the decision to delete the non-mercury subcategory on December 19, 2003, we stated "we have clarified that

chlorine and HCl emissions from the absorber vents of direct synthesis HCl production units at chlor-alkali facilities, as well as the associated storage tanks and transfer operations specified above, are included in the non-mercury cell chlorine production subcategory . . .” (68 FR 70948)

As shown through this cited history, the EPA has clearly established that HCl direct synthesis units are not part of the mercury cell chlor-alkali source category, and we are not pursuing their regulation under subpart IIII.

Comment: One commenter stated that the EPA proposed to limit the applicability of the rule with changes to - 63.8182, - 63.8184(a) and definitions in - 62.8266. The commenter asserted that the EPA did not provide any explanation or justification for these proposed changes, which is a violation of the CAA and makes it impossible to determine what the EPA is intending to accomplish. The commenter’s interpretation was that the EPA was changing the existing regulation to avoid regulating HCl emissions from the plant. The commenter stated that if that is the case, the EPA is acting unlawfully by attempting to bypass its statutory obligations to regulate all HAP and HAP emission points within a source category.

Response: The commenter is correct that these changes were not explained in the January 2021 proposal. They were changes that were proposed in both the 2008 proposal and the 2011 supplemental proposal, with the purpose of ensuring that a mercury thermal recovery unit affected source at a site where the mercury cell production facility was either converted or closed would continue to be subject to the emission limitations while processing the wastes from the closed mercury cell plant. Since the single remaining mercury cell chlor-alkali plant does not have a thermal mercury recovery unit, these changes are not necessary and should not have been included. They are in no way related to HCl emissions from the plant. In fact, as noted above, these amendments were holdovers from the 2008 proposal and the 2011 supplemental proposal when only mercury emissions were under consideration.

4. What is the rationale for our final approach for the CAA sections 112(d)(2) and (3) and (h)?

The rationale for our final decision regarding the non-mercury option is discussed above in section IV.B.4. For the fugitive chlorine work practices, the facility voluntarily implements work practices that are consistent with the proposed requirements and represents the MACT floor. As these chlorine emissions are fugitive in nature resulting from potential equipment leaks, they cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant or measured. Therefore, we are finalizing the proposed amendments requiring work practices to minimize chlorine emissions. Further, as discussed above, we are not developing standards under section 112(d)(2) and (3) for the HCl emissions from the direct synthesis HCl production units at the West Virginia site.

E. Amendments addressing emissions during periods of startup, shutdown, and malfunction and other topics?

1. What did we propose related to emissions during periods of startup, shutdown, and malfunction and other topics?

We proposed revisions related to emissions during periods of startup, shutdown, and malfunction (SSM); provisions for electronic submission of performance test results, performance evaluation reports, and Notification of Compliance Status (NOCS) reports; and corrections of various errors in compliance provisions in the NESHAP.

2. How did the decision related to emissions during periods of startup, shutdown, and malfunction and other topics change?

No changes have been made regarding our decisions concerning periods of SSM and the corrections of various compliance provisions in the current rule. For submission of performance test results, performance evaluation reports, and Notification of Compliance Status (NOCS) reports, we have determined it is necessary for the facility to switch to electronic reporting, considering the timing of the final non-mercury emission standard and related upcoming closure or conversion of the one remaining mercury cell chlor-alkali unit.

3. What key comments did we receive on proposed decision related to emissions during periods of startup, shutdown, and malfunction and other topics?

Comment: One commenter relayed several concerns regarding the proposed startup, shutdown, and malfunction provisions. According to the commenter, higher mercury emissions may occur during startup due to the hydrogen vent system and its control device, which will cause compliance concerns until alternative work practices can be developed to reduce emissions from this system. The commenter stated, at the time they submitted public comments, that the control device cannot be operated until the exhaust stream composition can be regulated, and the facility would need additional time to evaluate operational methods to improve operation of the control device. The commenter added that additional time would also be needed to determine the modifications necessary to reduce emissions during startup, to develop and implement a recordkeeping system, and perform operator training. The commenter requested a time frame of 12 months rather than 6 months for compliance with all the proposed SSM requirements.

Response: To understand the commenter's concerns better and to determine whether a different standard was needed for startup periods, the EPA had a teleconference meeting with the commenter to discuss the issue. During this discussion, the commenter indicated that the facility had found a way to comply with the emissions standards at all times, including startup. The notes of the meeting are in the docket for this rulemaking (EPA-HQ-OAR-2020-0560). Therefore, with the issue resolved, the EPA is finalizing the proposed requirements that the emissions limits apply at all times and no separate requirements are necessary for periods of startup, and further, no additional time is necessary or provided for compliance.

Comment: One commenter supported electronic reporting in general but stated a preference to submit any such information in PDF format.

Response: Given that the facility could operate for up to 3 more years before it converts to a non-mercury process or shut down, we have decided to require the facility to switch to electronic reporting.

Comment: One commenter noted that the EPA proposed to add a performance testing requirement at 40 CFR 63.8232(a). The commenter believes that the annual calibration testing at the facility satisfies the requirements of a performance test, and additional performance testing is not needed.

Response: The commenter misinterpreted the proposed changes to 40 CFR 63.8323(a), which did not add a new performance testing requirement. Rather, these proposed changes clarified the conditions under which the performance test must be conducted. These changes establish that performance tests must be conducted during normal operations and remove a reference to 40 CFR 63.7(e)(1), which conflicts with the requirement to comply with the standards at all times, including during periods of SSM. As these requirements are simply clarifying performance test conditions and ensuring the standards are met at all times, we are finalizing the revised provisions as proposed.

4. What is the rationale for our final approach for requirements related to emissions during periods of startup, shutdown, and malfunction and other topics?

The rationale for our final decision regarding the non-mercury option is discussed above in section IV.B.4. As discussed in the responses in the previous section, we are finalizing the proposed electronic reporting amendments for the reasons described above. Furthermore, we have not changed our final approach to the requirements for periods of SSM, and we are finalizing these requirements as proposed based on the considerations described above.

F. Public Notice and Comments

In addition to the comments on the proposal, one commenter objected to the EPA's decision not to publish the proposed rule amendments in the *Federal Register*.

Comment: The commenter observed that the EPA proposed significant changes to the regulatory language, but these changes were not in the EPA's proposed rule. The commenter remarked that the CAA and the Administrative Procedures Act (APA) both make plain that proposed rules must be published in the *Federal Register* (42 U.S.C. 7607(d)(3); 5 U.S.C.

553(b)). Further, the commenter stated that the CAA requires the EPA to include a summary of the major legal interpretations and policy considerations underlying its proposed rules, and the EPA did not provide this explanation nor any explanation for its proposed changes to the regulatory text. The commenter states that if the EPA wishes to make changes to the Code of Federal Regulations, it must withdraw this proposal, publish the proposed changes in the *Federal Register* and provide a new opportunity for public comment.

Response: The proposal met all APA and CAA notice and comment requirements. Nothing in the APA or the CAA, including the language the commenter cites, requires the EPA to publish proposed rule text in the *Federal Register*. The commenter suggests that because the EPA did not publish the proposed rule text, the EPA failed to meet the CAA 307(d)(3) requirement to publish a “notice of proposed rulemaking.” However, the requirement to publish a “notice of proposed rulemaking” is not a requirement to publish “proposed rule text.” Section 307(d)(3) specifies the required elements of a “notice of proposed rulemaking” and “proposed rule text” is not a required element. The elements the commenter cites that are required to be included in the notice of proposed rulemaking (a “statement of basis and purpose,” “a summary of... the major legal interpretations and policy considerations underlying the proposed rule, etc...” were included, and commenter does not suggest otherwise.

The APA does not require publication of proposed rule text in the *Federal Register* either. Section 553(b)(3) of the APA provides that a notice of proposed rulemaking shall include “*either* the terms or substance of the proposed rule or a description of the subjects and issues involved.” (emphases added). Thus, the APA clearly provides flexibility to describe the “subjects and issues involved” as an alternative to inclusion of the “terms or substance” of the proposed rule. See also *Rybachek v. U.S. E.P.A.*, 904 F.2d 1276, 1287 (9th Cir. 1990). (The EPA's failure to propose in advance the actual wording of a regulation does not make the regulation invalid where the EPA's discussion of the regulatory provisions “clearly describe ‘the subjects and issues involved.’”).

The commenter claims that the EPA did not publish “any explanation for its proposed changes”. However, the commenter does not identify any specific regulatory text that was not explained or specify any deficiency in any explanation of regulatory text in the *Federal Register* document. Such a generalized objection is not sufficiently specific. See, e.g., *Appalachian Power Co. v. E.P.A.*, 251 F.3d 1026, 1036 (D.C. Cir. 2001) (“An objection must be made with sufficient specificity reasonably to alert the agency.” (quoting *Tex Tin Corp. v. EPA*, 935 F.2d 1321, 1323 (D.C.Cir.1991))).

The commenter makes a vague assertion that the EPA’s approach was prejudicial to the ability of the public to be able to find and comment on the proposed regulatory changes but does not claim any actual difficulty in finding or commenting on the proposed rule language. The EPA approach was not prejudicial to the commenter or any member of the public. The notice of proposed rulemaking clearly explained that the proposed amendatory language and a redline strikeout version of the subpart IIIII showing proposed changes were available in the docket and on EPA’s website: <https://www.epa.gov/stationary-sources-air-pollution/mercury-cell-chloralkali-plants-national-emissions-standards>.

The proposed changes to the CFR that would be necessary to incorporate the changes proposed in this action are set out in an attachment to the memorandum titled Proposed Regulation Edits for 40 CFR part 63, subpart IIIII, available in the docket for this action (EPA-HQ-OAR-2020-0560). The document includes the specific proposed amendatory language for revising the CFR and, for the convenience of interested parties, a redline version of the regulation.

Although the EPA’s recent practice has generally been to publish proposed amendatory regulatory text, the EPA’s practice has varied. See, e.g., *Hazardous Air Pollutants: Proposed Regulations Governing Constructed, Reconstructed or Modified Major Sources*, 59 FR 15504 (April 1, 1994) (“The proposed regulatory text is not included in the *Federal Register* document, but is available in Docket No. A-91-64 or by request from the EPA contact persons designated

earlier in this note. The proposed regulatory language is also available on the technology Transfer Network (TTN), of EPA's electronic bulletin boards.”); Federal Standards for Marine Tank Vessel Loading and Unloading Operations and National Emission Standards for Hazardous Air Pollutants for Marine Tank Vessel Loading and Unloading Operations, 59 FR 25004 (May 13, 1994) (“The proposed regulatory text and other materials related to this rulemaking are available for review in the docket.”). And even when we do include the proposed text in the *Federal Register*, we often include a redline version of proposed regulations in the docket for rulemakings to assist the public in understanding the proposed regulatory changes. In our experience, stakeholders find the redline version far more useful than the proposed amendatory language in the format required by the Office of the *Federal Register*. Although appropriate for the task of revising the Code of Federal Regulations, this language can be difficult to assess without the accompanying full regulatory text. Given this and given that we rarely receive comments on the proposed amendatory language or on proposed regulatory language at all, we determined that for rulemakings such as these, it would be more efficient to take the approach here of making both easily accessible but not including the proposed amendatory text in the document.

V. Summary of Cost, Environmental, and Economic Impacts and Additional Analyses Conducted

A. What are the affected facilities?

There is one facility affected by this action, which is the one remaining mercury cell chlor-alkali facility operating in the U.S. This facility is located in West Virginia.

B. What are the air quality and other environmental impacts?

The air quality impacts of this final action will be the elimination of approximately 125 pounds of mercury emissions annually. In addition to this air quality impact, this action will result in the elimination of around 900 pounds of mercury that are released annually to other media.

In addition, it is estimated that the conversion of the remaining mercury cell facility to membrane cells will result in an energy savings of around 25 percent which results in an estimated cost savings of around \$1.5 million per year.

C. What are the cost impacts?

The capital cost of complying with the promulgation of the non-mercury requirement is estimated to be \$69.4 million if the facility chooses to convert its mercury unit to a non-mercury process rather than rely on its two existing non-mercury units. The total estimated annual costs, including the annualized capital costs minus the savings realized from the lower electricity needs and the savings related to the elimination of the burden of the environmental regulations associated with mercury, are \$2.7 million per year in 2019 dollars. Table 3 presents the estimated annual cost components for conversion from mercury cell to membrane cell technology.

Table 3. Total Annual Cost of Conversion of the West Virginia Mercury Cells to Membrane Cells (2019\$)

Annual Cost Component	Annual Cost (\$/yr)
Capital Recovery	\$4,764,982
Mercury Storage	\$53,364
Compliance Savings	-\$546,572
Electricity Savings	-\$1,504,893
Total Annual	\$2,766,880

D. What are the economic impacts?

The net present value of the estimated cost impacts of the final amendments to the Mercury Cell Chlor-Alkali NESHAP is \$43.0 million, discounted at a 7 percent rate to 2020 over a 20-year analytic time frame from 2021 to 2040 in 2019 dollars. Using a 3 percent discount rate, the net present value of the estimated cost impacts is \$39.4 million. The equivalent annualized value, which is a measure of the annualized costs of the final rule consistent with the net present value, is \$4.0 million and \$2.6 million for 7 and 3 percent discount rates respectively.

As stated previously in section B.3., the estimated total annual costs are \$2.7 million for the Westlake facility. Based on our analysis, the estimated annualized costs are only about 0.04

percent of the annual revenue of the facility's ultimate parent company in 2020. Since the estimated cost impacts are minimal, no significant economic impacts to the ultimate parent company nor its consumers are anticipated due to the final amendments. For additional details on the economic impact analysis please see the memorandum entitled *Economic Impact Analysis for the Final Mercury Cell Chlor-Alkali National Emission Standard for Hazardous Air Pollutants (NESHAP) Beyond-Floor Determination and Risk and Technology Review (RTR)* available in the docket (EPA-HQ-OAR-2020-0560).

E. What are the benefits?

The EPA anticipates a complete elimination of mercury emissions at the one remaining mercury cell chlor-alkali plant as a result of the final amendments to the Mercury Cell Chlor-Alkali Plants NESHAP. This is estimated to be a reduction of 125 pounds of mercury emitted to the atmosphere annually and approximately 900 pounds of mercury released annually to other media. EPA has not monetized the health benefits of reduced mercury emissions due to this rulemaking due to the lack of site specific data and insufficient economic research to support the valuation of the health impacts often associated with exposure to individual HAP. For the 2022 proposed rule for the Mercury Air Toxics Standard (MATS) EPA did develop bounding estimates for the risk and associated dollar valuation associated with mercury emitted from U.S. Electric Utility Steam Generating Units. These estimates focused on exposure of the general population to methylmercury through commercial fish consumption and included IQ loss for children exposed in-vitro and adult myocardial infarction (MI)-related mortality. These bounding estimates are subject to uncertainty which is discussed in the rule language.⁴ While the risk assessment conducted for the RTR indicates that risks from the source category are already low,

⁴National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units – Revocation of the 2020 Reconsideration, and Affirmation of the Appropriate and Necessary Supplemental Finding; Notice of Proposed Rulemaking (87 FR 7624, February 9, 2022).

future risks from this source category will be reduced to zero. Furthermore, as described above, this action will eliminate the releases of mercury to the global pool from this source.

F. What analysis of environmental justice did we conduct?

Consistent with EPA's commitment to integrating environmental justice (EJ) in the agency's actions, and following the directives set forth in multiple Executive Orders, the Agency has carefully considered the impacts of this action on communities with EJ concerns. For this action, we performed a demographic analysis, which is an assessment of risks to individual demographic groups of the populations living within 5 kilometers (km) and within 50 km of the single Mercury Cell Chlor-Alkali facility associated with this rule. While there are three demographic groups (*i.e.*, over age 25 without a high school diploma, those below the poverty level, and those aged 65 and up) around this facility that are higher than the national average, we find that no one is exposed to a cancer risk at or above 1-in-1 million or to a chronic noncancer TOSHI greater than 1. As such, the EPA determined that this action provides an ample margin of safety to protect public health for all populations, including communities already overburdened by pollution. Following is a more detailed description of how the agency considers EJ in the context of regulatory development.

Executive Order 12898 directs the EPA to identify the populations of concern who are most likely to experience unequal burdens from environmental harms; specifically, populations of people of color, low-income populations, and indigenous peoples (59 FR 7629, February 16, 1994). Additionally, Executive Order 13985 is intended to advance racial equity and support underserved communities through federal government actions (86 FR 7009, January 20, 2021). Executive Order 14008 further declares a policy "to secure environmental justice and spur economic opportunity for disadvantaged communities that have been historically marginalized overburdened by pollution and under-investment in housing, transportation, water and wastewater infrastructure, and health care" (86 FR 7619, February 1, 2021). The EPA defines EJ as "the fair treatment and meaningful involvement of all people regardless of race, color, national

origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies⁵”. The EPA further defines the term fair treatment to mean that “no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies”. In recognizing that people of color and low-income populations often bear an unequal burden of environmental harms and risks, the EPA continues to consider ways of protecting them from adverse public health and environmental effects of air pollution.

To examine the potential for any environmental justice issues that might be associated with the source category, we performed a demographic analysis, which is an assessment of risks to individual demographic groups of the populations living within 5 kilometers (km) and within 50 km of the facilities. In the analysis, we evaluated the distribution of HAP-related cancer and noncancer risks from the Mercury Cell Chlor-Alkali Plants source category across different demographic groups within the populations living near facilities.

As mentioned above, the results of the demographic analysis for the source category indicate that three demographic groups included in the analysis are higher than the national average in percentage terms within 5 km of the facility.⁶ These groups include those over 25 without a high school diploma (17 percent versus 14 percent nationally), those below the poverty level (25 percent versus 14 percent nationally) and those aged 65 and up (18 percent versus 14 percent nationally). When examining the risk levels of those exposed to emissions from Mercury Cell Chlor-Alkali plants, we determined that no one is exposed to a cancer risk at or above 1-in-1 million or to a chronic noncancer TOSHI greater than 1. The methodology and the results of the

⁵ See <https://www.epa.gov/environmentaljustice>

⁶When the demographic analysis was completed in mid-2020, there were 2 facilities in the mercury cell chlor-alkali source category and both were subject to 40 CFR part 63, subpart IIII. However, in late 2020 one of those facilities converted to a non-mercury process. Therefore, currently only one facility remains in the source category.

demographic analysis are presented in a technical report, *Risk and Technology Review - Analysis of Demographic Factors for Populations Living Near Mercury Cell Chlor-Alkali Plants Source Category Operations*, which is available in the docket.

G. What analysis of children's environmental health did we conduct?

The EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. The health risk assessments for this action are contained in the document titled *Residual Risk Assessment for the Mercury Cell Chlor-Alkali Plants Source Category in Support of the 2021 Risk and Technology Review Final Rule*, available in the docket (Docket ID No. EPA-HQ-OAR-2020-0560).

VI. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at:

<https://www.epa.gov/laws-regulations/laws-and-executive-orders>.

A. Executive Orders 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review because it raises novel legal or policy issues. Any changes made in response to OMB recommendations have been documented in the docket.

B. Paperwork Reduction Act (PRA)

The information collection activities in rule have been submitted for approval to OMB under the PRA. The Information Collection Request (ICR) document that the EPA prepared has been assigned EPA ICR number 2046.11. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here. The information collection requirements are not enforceable until OMB approves them.

The information requirements in this rulemaking are based on the notification, recordkeeping, and reporting requirements in the NESHAP General Provisions (40 CFR part 63,

subpart A), which are mandatory for all operators subject to national emission standards. These notifications, reports, and records are essential in determining compliance, and are specifically authorized by CAA section 114 (42 U.S.C. 7414). All information submitted to the EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to Agency policies set forth in 40 CFR part 2, subpart B.

The EPA is finalizing amendments to eliminate the SSM plan and reporting requirements; add requirements for electronic reporting of notifications and reports and performance test results; and add a reporting requirement for meeting the mercury emissions prohibitions. This information will be collected to assure compliance with the Mercury Cell Chlor-Alkali Plants NESHAP.

Respondents/affected entities: The respondents to the recordkeeping and reporting requirements are owners or operators of flexible polyurethane foam fabrication operations subject to 40 CFR part 63, subpart IIII.

Respondent's obligation to respond: Mandatory (40 CFR part 63, subpart IIII).

Estimated number of respondents: 1 facility.

Frequency of response: Initially, occasionally, and semi-annually.

Total estimated burden: 3,567 total hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: \$457,200 (per year), includes \$29,200 annualized capital or operation & maintenance costs.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9. When OMB approves this ICR, the Agency will announce that approval in the *Federal Register* and publish a

technical amendment to 40 CFR part 9 to display the OMB control number for the approved information collection activities contained in this final rule.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities. The ultimate parent company for the single affected facility in the source category is not a small entity given the Small Business Administration small business size definition for this industry (1,000 employees or greater for NAICS 325180).

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of \$100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. While this action creates an enforceable duty on the private sector, the cost does not exceed \$100 million or more in any one year.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications as specified in Executive Order 13175. The mercury cell chlor-alkali plant affected by this final action is not owned or operated by tribal governments or located within tribal lands. Thus, Executive Order 13175 does not apply to this action.

G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the

environmental health or safety risks addressed by this action present a disproportionate risk to children. This action's health and risk assessments are contained in section IV.A of this preamble and the document, *Residual Risk Assessment for the Mercury Cell Chlor-Alkali Plants Source Category in Support of the 2021 Risk and Technology Review Final Rule*, which is available in the docket for this rulemaking.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a "significant energy action" because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. New standards are proposed for 40 CFR part 63, subpart IIIII to limit mercury and Cl emissions from mercury cell chlor-alkali plants. The proposed limits will have lower electricity costs for the one affected facility so it will not have a significant adverse effect on the supply, distribution, or use of energy.

I. National Technology Transfer and Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994).

The documentation for this decision is contained in the technical report titled, *Risk and Technology Review - Analysis of Demographic Factors for Populations Living Near Mercury Cell Chlor-Alkali Plants Source Category Operations*, available in the docket for this action.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a “major rule” as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 63

Environmental protection, Administrative practice and procedures, Air pollution control, Hazardous substances, Intergovernmental relations, Reporting and recordkeeping requirements.

Michael S. Regan,

Administrator.

For the reasons set out in the preamble, 40 CFR part 63 is amended as follows:

**PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR
POLLUTANTS FOR SOURCE CATEGORIES**

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

2. The heading for subpart IIIII is revised to read as follows:

**Subpart IIIII—National Emission Standards for Hazardous Air Pollutants for Mercury
Cell Chlor-Alkali Plants**

3. Section 63.8180 is revised to read as follows:

§63.8180 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants (NESHAP) for affected sources at mercury cell chlor-alkali plants. This subpart also establishes requirements to demonstrate initial and continuous compliance with all applicable emission limitations and work practice standards in this subpart.

4. Section 63.8182 is amended by revising paragraph (c) introductory text to read as follows:

§63.8182 Am I subject to this subpart?

* * * * *

(c) Beginning on December 19, 2006, the provisions of subpart E of 40 CFR part 61 that apply to mercury cell chlor-alkali plants, which are listed in paragraphs (c)(1) through (3) of this section, are no longer applicable.

* * * * *

5. Section 63.8184 is amended by revising paragraphs (a)(1) and (2) to read as follows:

§63.8184 What parts of my plant does this subpart cover?

(a) * * *

(1) The mercury cell chlor-alkali production facility designates an affected source consisting of all cell rooms and ancillary operations used in the manufacture of product chlorine, product caustic, and by-product hydrogen at a plant site. This subpart covers mercury emissions from by-product hydrogen streams and end box ventilation system vents, mercury fugitive emissions associated with cell rooms, hydrogen systems, caustic systems, and storage areas for mercury-containing wastes; and chlorine fugitive emissions associated with the mercury cell chlor-alkali production facility.

(2) The mercury recovery facility designates an affected source consisting of all processes and associated operations needed for mercury recovery from wastes at a plant site. This subpart covers mercury emissions from mercury thermal recovery unit vents and fugitive emission sources of mercury associated with storage areas for mercury-containing wastes.

* * * * *

6. Section 63.8186 is amended by revising paragraph (a) to read as follows:

§63.8186 When do I have to comply with this subpart?

(a) If you have an existing affected source, you must comply according to the dates specified in paragraphs (a)(1) through (5) of this section, as applicable.

(1) You must comply with each emission limitation, each work practice standard specified in paragraphs §63.8192(a) through (f) or each work practice standard in paragraphs §63.8192(e) through (g), and with each recordkeeping and reporting requirement in this subpart that applies to you by December 19, 2006, except as specified in paragraphs (a)(2) through (5) of this section.

(2) You must comply with each work practice standard in §63.8192(a) through (c) and (e) through (h) and the electronic reporting requirements in §63.8232(g), §63.8252(g), and §63.8254(e) by November 7, 2022.

(3) Until November 7, 2022, you must comply with the requirements in §63.8226(a) and the requirements specified in the startup, shutdown, and malfunction plan required at §63.8226(b).

(4) On and after November 7, 2022, you must comply with the applicable requirements in paragraph §63.8226(c).

(5) On and after May 6, 2025, you must comply with the emission limitations in §63.8190(a)(2)(ii) and the notification requirement in §63.8252(h).

* * * * *

7. Section 63.8190 is amended by revising paragraph (a)(2) to read as follows:

§63.8190 What emission limitations must I meet?

(a) * * *

(2) Existing mercury cell chlor-alkali production facility. Until the compliance date listed in §63.8186(a)(5), you must comply with paragraph (a)(2)(i) of this section. On and after the compliance date listed in §63.8186(a)(5), you must comply with paragraph (a)(2)(ii) of this section.

(i) During any consecutive 52-week period, you must not discharge to the atmosphere total mercury emissions in excess of the applicable limit in paragraph (a)(2)(i)(A) or (B) of this section calculated using the procedures in §63.8243(a).

(A) 0.076 grams of mercury per megagram of chlorine produced (1.5×10^{-4} pounds of mercury per ton of chlorine produced) from all by-product hydrogen streams and all end box ventilation system vents when both types of emission points are present.

(B) 0.033 grams of mercury per megagram of chlorine produced (6.59×10^{-5} pounds of mercury per ton of chlorine produced) from all by-product hydrogen streams when end box ventilation systems are not present.

(ii) Emissions of mercury are prohibited from an existing mercury cell chlor-alkali production facility.

* * * * *

8. Section 63.8192 is amended by revising the introductory text, paragraph (a), and paragraph (g) introductory text, and adding paragraph (h) to read as follows:

§63.8192 What work practice standards must I meet?

In accordance with the compliance dates specified in §63.8186(a)(1), you must meet the work practice requirements specified in paragraphs (a) through (f) of this section. As an alternative to the requirements specified in paragraphs (a) through (d) of this section, you may choose to comply with paragraph (g) of this section. On and after the compliance date specified in §63.8186(a)(2) and until the compliance date specified in §63.8186(a)(5), you must meet the work practice requirements specified in paragraphs (a) through (c) and (e) through (h) of this section.

(a) You must meet the work practice standards in Tables 1 through 4 to this subpart.

* * * * *

(g) You must institute a cell room monitoring program to continuously monitor the mercury vapor concentration in the upper portion of each cell room and to take corrective actions as quickly as possible when elevated mercury vapor levels are detected. As specified in §63.8252(e)(1)(iv), you must prepare and submit to the Administrator, a cell room monitoring plan containing the elements listed in Table 5 to this subpart and meet the requirements in paragraphs (g)(1) through (4) of this section.

* * * * *

(h) You must comply with the requirements specified in paragraphs (h)(1) through (4) of this section to reduce fugitive chlorine emissions in the mercury cell chlor-alkali production facility affected source.

(1) You must identify each piece of equipment located throughout the mercury cell chlor-alkali production facility affected source that contains chlorine gas at a concentration of at least 5 percent by volume. You may identify equipment by a list or on a process or piping diagram. You may exclude equipment that is under negative pressure.

(2) You must install ambient chlorine sensors at the mercury cell chlor-alkali production facility affected source to measure the ambient chlorine concentration.

(i) Ambient chlorine sensors must have a detection limit of 0.5 ppmv or less.

(ii) The sensors must be operated continuously to obtain a measurement at least once each 15 minutes.

(iii) You must identify the location of the sensors by a list or on a process or piping diagram.

(iv) You must operate, calibrate, and maintain these sensors in accordance with manufacturer instructions.

(v) You must keep the necessary parts for routine repairs of the sensors readily available.

(3) You must perform inspections to identify leaks of chlorine using olfactory observations according to the schedules in paragraphs (h)(3)(i) and (ii) of this section. A leak is detected when there is an olfactory observation of a leak. If a leak is detected, you must comply with the repair provisions in paragraph (h)(4) of this section.

(i) At least once each 12 hours, you must inspect each piece of equipment located throughout the mercury cell chlor-alkali production facility affected source that contains chlorine gas at a concentration of greater than 5 percent by volume for chlorine leaks, excluding equipment that is under negative pressure.

(ii) Within 1 hour of detection of a 1-hour average chlorine concentration of 2 ppmv or greater by a sensor installed and operated in accordance with paragraph (h)(2) of this section, you must inspect each piece of equipment located throughout the mercury cell chlor-alkali production facility affected source that contains chlorine gas at a concentration of greater than 5 percent by volume for chlorine leaks, excluding equipment that is under negative pressure.

(4) You must undertake a first attempt at repair no later than 1 hour after the leak is detected, and the leak must be repaired no later than 72 hours after the leak is detected. A leak is repaired when there is no olfactory observation of a leak.

9. Section 63.8222 is revised to read as follows:

§63.8222 What are my operation and maintenance requirements?

At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by the applicable standards have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, reports and inspection of the source.

10. Section 63.8226 is revised to read as follows:

§63.8226 What are my general requirements for complying with this subpart?

(a) Until November 7, 2022, you must be in compliance with the applicable emission limitations in §63.8190 and the applicable work practice standards in §63.8192 at all times, except during periods of startup, shutdown, and malfunction.

(b) Until November 7, 2022, you must develop and operate as specified by a written startup, shutdown, and malfunction plan (SSMP) according to the provisions in §63.6(e)(3).

(c) On and after November 7, 2022, the provisions of paragraphs (a) and (b) of this section no longer apply, and you must be in compliance with the applicable emission limitations in §63.8190 and the applicable work practice standards in §63.8192 at all times.

11. Section 63.8232 is amended by revising the introductory text and paragraph (a) and adding paragraph (g) to read as follows:

§63.8232 What test methods and other procedures must I use to demonstrate initial compliance with the emission limits?

You must conduct a performance test for each by-product hydrogen stream, end box ventilation system vent, and mercury thermal recovery unit vent according to the conditions detailed in paragraphs (a) through (d) of this section.

(a) You must conduct each performance test under conditions representative of normal operations. You may not conduct performance tests during periods of startup, shutdown, or malfunction. You must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. Upon request, you shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

* * * * *

(g) Within 60 days after the date of completing each performance test specified in this section, you must submit the results of the performance test following the procedures specified in paragraphs (g)(1) through (3) of this section.

(1) *Data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT website (<https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert>) at the time of the test.* Submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed through the EPA's Central Data Exchange (CDX) (<https://cdx.epa.gov/>). The data must be submitted in a file format generated using the EPA's ERT. Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website.

(2) *Data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test.* The results of the performance test must be included as an attachment in the ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT website. Submit the ERT generated package or alternative file to the EPA via CEDRI.

(3) *Confidential business information (CBI).* Do not use CEDRI to submit information you claim as CBI. Anything submitted using CEDRI cannot later be claimed CBI. Although we

do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim for some of the information submitted under paragraph (g)(1) or (2) of this section, you must submit a complete file, including information claimed to be CBI, to the EPA. The file must be generated using the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT website. Submit the file on a compact disc, flash drive, or other commonly used electronic storage medium and clearly mark the medium as CBI. Mail the electronic medium to U.S. EPA/OAQPS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described in paragraphs (g)(1) and (2) of this section. All CBI claims must be asserted at the time of submission. Furthermore, under CAA section 114(c), emissions data is not entitled to confidential treatment, and the EPA is required to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available.

12. Section 63.8236 is amended by revising paragraph (c) introductory text and adding paragraphs (e) and (f) to read as follows:

§63.8236 How do I demonstrate initial compliance with the emission limitations and work practice standards?

* * * * *

(c) Prior to the compliance date specified in §63.8186(a)(2), for each affected source, you have demonstrated initial compliance with the applicable work practice standards in §63.8192 if you comply with paragraphs (c)(1) through (7) of this section.

* * * * *

(e) On and after the compliance date specified in §63.8186(a)(2), for each affected source, you have demonstrated initial compliance with the applicable work practice standards for mercury emissions in §63.8192(a) through (c) and (e) through (g) if you comply with paragraphs (e)(1) through (4) of this section.

(1) You have submitted a Revised Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.8252(f).

(2) You certify in your Revised Notification of Compliance Status that you are operating according to the work practice standards for mercury emissions in §63.8192(a) through (c), (e), and (f).

(3) You have submitted your cell room monitoring plan as part of your Revised Work Practice Notification of Compliance Status and you certify in your Revised Notification of Compliance Status that you are operating according to the continuous cell room monitoring program under §63.8192(g).

(4) You have re-submitted your washdown plan as part of your Revised Notification of Compliance Status and you re-certify in your Revised Notification of Compliance Status that you are operating according to your washdown plan under §63.8192(e).

(f) On and after the compliance date specified in §63.8186(a)(2), for each affected source, you have demonstrated initial compliance with the applicable work practice standards for chlorine emissions in §63.8192(h) if you meet the requirements of paragraphs (f)(1) through (3) of this section.

(1) You have installed chlorine sensors in accordance with §63.8192(h)(2).

(2) You have certified in your Revised Notification of Compliance Status that you are operating according to the work practice standards in §63.8192(h).

(3) You have submitted your Revised Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.8252(f).

13. Section 63.8242 is amended by revising the section heading and paragraphs (a)(2) and (a)(3)(v) to read as follows:

§63.8242 What are the installation, operation, and maintenance requirements for my continuous mercury monitoring systems?

(a) * * *

(2) Each mercury continuous emissions monitor analyzer must have a detector with the capability to detect a mercury concentration of either 0.1 µg/m³ or 0.5 times the mercury concentration level measured during the performance test conducted according to §63.8232.

(3) * * *

(v) Ongoing data quality assurance procedures according to the requirements of §63.8(d)(1) and (2). You shall keep these written procedures on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If the performance evaluation plan is revised, you shall keep previous (*i.e.*, superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. The program of corrective action shall be included in the plan required under §63.8(d)(2).

* * * * *

14. Section 63.8246 is amended by revising paragraphs (b)(1) introductory text and (c) and adding paragraph (d) to read as follows:

§63.8246 How do I demonstrate continuous compliance with the emission limitations and work practice standards?

* * * * *

(b) * * *

(1) For each mercury thermal recovery unit vent, you must demonstrate continuous compliance with the applicable emission limit specified in §63.8190(a)(3) by maintaining the outlet mercury daily-average concentration no higher than the applicable limit. To determine the outlet mercury concentration, you must monitor according to paragraph (b)(1)(i) or (ii) of this section.

* * * * *

(c) You must demonstrate continuous compliance with the applicable work practice standards for mercury emissions in §63.8192 by maintaining records in accordance with §63.8256(c) and (e).

(d) You must demonstrate continuous compliance with the applicable work practice standards for chlorine emissions in §63.8192(h) by continuously operating the chlorine sensors required by §63.8192(h)(2), inspecting equipment in accordance with §63.8192(h)(3), repairing equipment in accordance with §63.8192(h)(4) and maintaining records in accordance with §63.8256(f).

15. Section 63.8248 is amended by revising paragraphs (a) introductory text, (a)(1) and (2), and (2), and adding paragraph (b) introductory text to read as follows:

§63.8248 What other requirements must I meet?

(a) *Deviations.* The instances specified in paragraphs (a)(1) through (4) of this section are deviations and must be reported according to the requirements in §63.8254 and recorded according to the requirements in §63.8256(a)(2).

(1) You must report each instance in which you did not meet each emission limitation in §63.8190 that applies to you.

(2) You must report each instance in which you did not meet each work practice standard in §63.8192 that applies to you.

* * * * *

(b) * * * The provisions of paragraphs (b)(1) through (3) of this section apply until November 7, 2022. On and after November 7, 2022, the provisions of paragraphs (b)(1) through (3) of this section no longer apply.

* * * * *

16. Section 63.8252 is amended by revising paragraphs (d) and (e)(1)(i) and adding paragraphs (f) through (h) to read as follows:

§63.8252 What notifications must I submit and when?

* * * * *

(d) For each performance test that you are required to conduct for by-product hydrogen streams and end box ventilation system vents and for mercury thermal recovery unit vents, you must submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required in §63.7(b)(1).

(e) * * *

(1) * * *

(i) If you choose not to implement a cell room monitoring program according to §63.8192(g), a certification that you are operating according to the applicable work practice standards for mercury emissions in §63.8192(a) through (d) and your floor-level mercury vapor measurement plan required by §63.8192(d).

* * * * *

(f) You must submit a Revised Notification of Compliance Status before the close of business on the date 30 days after the compliance date in §63.8186(a)(2) containing the items in paragraphs (f)(1) through (5) of this section:

(1) A certification that you are operating according to the work practice standards for mercury emissions in §63.8192(a) through (c) and (e) through (g).

(2) Your cell room monitoring plan, including your initial action level determined in accordance with §63.8192(g)(2), and a certification that you are operating according to the continuous cell room monitoring program under §63.8192(g).

(3) Your washdown plan, and a certification that you are operating according to your washdown plan under §63.8192(e).

(4) Records of the mass of virgin mercury added to cells for every year since 2001.

(5) A certification that you have installed chlorine sensors in accordance with §63.8192(h)(2) and that you are operating according to the work practice standards for chlorine emissions in §63.8192(h).

(g) You must submit all subsequent Notification of Compliance Status reports and Revised Notification of Compliance Status reports in PDF format to the EPA via CEDRI, which can be accessed through EPA's CDX (<https://cdx.epa.gov/>).

(h) You must submit a notification of compliance with the prohibition of mercury emissions as specified in paragraphs (e)(1) and (2) of this section.

(1) The notification must include the information specified in paragraph (e)(1)(i) and (ii) of this section.

(i) A certification that the requirement of §63.8190(a)(2)(ii) has been met.

(ii) A brief explanation of how the requirement of §63.8190(a)(2)(ii) has been met.

(2) You must submit this notification before the close of business on the 30th calendar day following the date when compliance with §63.8190(a)(2)(ii) is attained.

17. Section 63.8254 is amended by:

- a. Revising paragraph (b) introductory text;
- b. Removing and reserving paragraph (b)(4);
- c. Revising paragraphs (b)(7) through (9);
- d. Adding paragraphs (b)(13) and (14);
- e. Removing and reserving paragraph (c); and
- f. Adding paragraph (e).

The revisions and additions read as follows:

§63.8254 What reports must I submit and when?

* * * * *

(b) *Compliance report contents.* Each compliance report must contain the information in paragraphs (b)(1) through (3) of this section, and as applicable, paragraphs (b)(5) through (13) of this section.

* * * * *

(7) For each deviation from the requirements for work practice standards in §63.8192, the information in paragraphs (b)(7)(i) and (ii) of this section.

(i) For each deviation from the mercury work practice standards in Tables 1 through 4 to this subpart that occurs at an affected source (including deviations where the response intervals were not adhered to as described in §63.8192(b)), each deviation from the cell room monitoring program monitoring and data recording requirements in §63.8192(g)(3), and each deviation from the response intervals required by §63.8192(g)(4) when an action level is exceeded, the compliance report must contain the information in paragraphs (b)(1) through (3) of this section and the information in paragraphs (b)(7)(i)(A) through (C) of this section.

(A) The total operating time of each affected source during the reporting period.

(B) Information on the number, date, time, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(C) A list of the affected sources or equipment.

(ii) For each deviation from the fugitive chlorine requirements in §63.8192(h), including periods when the chlorine sensors required by §63.8192(h)(2) were not operating; instances where the chlorine sensors required by §63.8192(h)(2) were not calibrated and maintained in accordance with manufacturer instructions or spare parts were not maintained; instances where inspections were not performed in accordance with §63.8192(h)(3)(i) and (ii); and instances where leak repair intervals in §63.8192(h)(4) were not met; the compliance report must contain the information in paragraphs (b)(1) through (3) of this section and the information in paragraphs (b)(7)(ii)(A) through (C) of this section.

(A) The total operating time of each affected source during the reporting period.

(B) Information on the number, date, time, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(C) A list of the affected sources or equipment.

(8) For each deviation from an emission limitation occurring at an affected source where you are using a mercury continuous emission monitor, according to the site-specific monitoring plan required in §63.8242(a)(3), to comply with the emission limitation in this subpart, you must include the information in paragraphs (b)(1) through (3) of this section and the information in paragraphs (b)(8)(i) through (xv) of this section.

(i) A list of the affected sources and equipment.

(ii) The date and time that each deviation started and stopped.

(iii) For each deviation, the cause of the deviation (including unknown cause, if applicable), as applicable, and corrective action taken.

(iv) For each deviation, an estimate of the quantity of each regulated pollutant emitted over any emission limit.

(v) A description of the method used to estimate the emissions.

(vi) The date and time of each instance in which a continuous monitoring system was inoperative, except for zero (low-level) and high-level checks.

(vii) The date, time, and duration of each instance in which a continuous monitoring system was out-of-control, including the information in §63.8(c)(8).

(viii) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(ix) A breakdown of the total duration of the deviations during the reporting period including those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(x) A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of monitoring system downtime as a percent of the total source operating time during the reporting period.

(xi) An identification of each hazardous air pollutant that was monitored at the affected source.

(xii) A brief description of the process units.

(xiii) A brief description of the continuous monitoring system.

(xiv) The date of the latest continuous monitoring system certification or audit.

(xv) A description of any changes in monitoring system, processes, or controls since the last reporting period.

(9) For each deviation from an operation and maintenance standard occurring at an affected source where you are using the periodic monitoring option specified in §63.8240(b) and your final control device is not a nonregenerable carbon adsorber, the compliance report must include the information in paragraphs (b)(1) through (3) of this section and the information in paragraphs (b)(9)(i) through (xiii) of this section.

(i) A list of the affected sources or equipment.

(ii) The total operating time of each affected source during the reporting period.

(iii) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(iv) For each deviation, an estimate of the quantity of each regulated pollutant emitted over any emission limit.

(v) A description of the method used to estimate the emissions.

(vi) The date and time of each instance in which a CPMS was inoperative, except for zero (low-level) and high-level checks.

(vii) The date, time, and duration of each instance in which a CPMS was out-of-control, including the information specified in §63.8(c)(8).

(viii) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(ix) A breakdown of the total duration of the deviations during the reporting period including those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(x) A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of monitoring system downtime as a percent of the total source operating time during the reporting period.

(xi) A brief description of the CPMS.

(xii) The date of the latest CPMS certification or audit.

(xiii) A description of any changes in monitoring system, processes, or controls since the last reporting period.

* * * * *

(13) The compliance report must contain the information specified in paragraphs (b)(13)(i) through (iii) for each instance where the 1-hour average concentration of chlorine detected by a chlorine sensor required by §63.8192(h)(2) was 2 ppmv or greater.

(i) The date and times a chlorine sensor detected chlorine concentrations of 2 ppmv or greater.

(ii) The location of the sensor.

(iii) The date and time that the sensor returned to a 1-hour average concentration of less than 2 ppmv.

(14) The compliance report must contain the information specified in paragraphs (b)(14)(i) and (ii) for all inspections conducted under either §63.8192(h)(3)(i) or (ii). You must also record the information in paragraphs (b)(14)(iii) through (vii) of this section for each leak identified.

(i) The date of each inspection.

(ii) The reason for each inspection (i.e., a routine inspection conducted each 12 hours or an inspection conducted in response to a 2 ppmv or greater 1-hour average concentration of chlorine, as detected by a sensor).

(iii) Location of the leak.

(iv) Date and time the leak was identified.

(v) Date and time of initial repair attempt.

(vi) Date and time the leak is repaired.

(vii) A description of the repair made to stop the leak.

* * * * *

(e) The owner or operator must submit semiannual compliance reports in PDF format to the EPA via CEDRI, which can be accessed through EPA's CDX (<https://cdx.epa.gov/>).

18. Section 63.8256 is amended by revising paragraphs (a)(2) and (c) introductory text and adding paragraphs (e) and (f) to read as follows:

§63.8256 What records must I keep?

(a) * * *

(2) The records specified in paragraphs (a)(2)(i) and (ii) of this section related to deviations.

(i) Record actions taken to minimize emissions in accordance with §63.8222 and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

(ii) Records of the information reported as required in §63.8254(b)(7) through (9) and (11) through (13).

* * * * *

(c) Records associated with the work practice standards for mercury emissions that must be kept prior to the compliance date in §63.8186(a)(2).

* * * * *

(e) Records associated with the work practice standards for mercury emissions that must be kept after the compliance date in §63.8186(a)(2).

(1) The records specified in Table 9 to this subpart related to the work practice standards in Tables 1 through 4 of this subpart.

(2) You must maintain a copy of your current washdown plan and records of when each washdown occurs.

(3) You must maintain records of the mass of virgin mercury added to cells for each reporting period.

(4) You must keep your current cell room monitoring plan and the records specified in paragraphs (e)(4)(i) through (v) of this section.

(i) Records of the monitoring conducted in accordance with §63.8192(g)(2)(i) to establish your action level, and records demonstrating the development of this action level.

(ii) Records of the cell room mercury concentration monitoring data collected.

(iii) Instances when the action level is exceeded.

(iv) Records specified in §63.8192(g)(4)(i) for maintenance activities that cause the mercury vapor concentration to exceed the action level.

(v) Records of all inspections and corrective actions taken in response to a non-maintenance related situation in which the mercury vapor concentration exceeds the action level.

(f) You must keep the records specified in paragraphs (f)(1) through (4) of this section associated with the work practice standards for fugitive chlorine emissions specified in §63.8192(h) after the compliance date in §63.8186(a)(2).

(1) Identification of all equipment in the mercury cell chlor-alkali production facility affected source containing chlorine gas at a concentration of greater than 5 percent by volume. You may exclude equipment that is under negative pressure.

(2) Records of the information reported as required in §63.8254(b)(13) and (14).

(3) You must record the information specified in paragraphs (f)(3)(i) through (iv) of this section for the chlorine sensors required by §63.8192(h)(2).

(i) The location, manufacturer, and model number of each sensor.

(ii) The manufacturer's instructions for operation, maintenance, and calibration of the chlorine sensors.

(iii) Records of all maintenance and calibration of the chlorine sensors.

(iv) You must record all periods when the chlorine sensors are not operating.

(4) You must maintain records of all chlorine concentration measurements.

19. Section 63.8262 is revised to read as follows:

§63.8262 What parts of the General Provisions apply to me?

Table 10 to this subpart shows which parts of the General Provisions in §§63.1 through 63.13 apply to you.

20. Section 63.8264 is amended by revising paragraph (c) introductory text and adding paragraph (c)(5) to read as follows:

§63.8264 Who implements and enforces this subpart?

* * * * *

(c) The authorities in paragraphs (c)(1) through (5) of this section will not be delegated to State, local, or tribal agencies.

* * * * *

(5) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

21. Section 63.8266 is amended by revising the definition of “Deviation” to read as follows:

§63.8266 What definitions apply to this subpart?

* * * * *

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emission limitation (including any operating limit) or work practice standard (including any monitoring plan);

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the title V operating permit for any affected source required to obtain such a permit; or

(3) Fails to take corrective actions within 48 hours that result in parameter monitoring values being within range.

* * * * *

22. Table 5 to subpart IIII of part 63 is amended by revising the introductory text to read as follows:

Table 5 to Subpart IIII of Part 63—Required Elements of Floor-Level Mercury Vapor Measurement and Cell Room Monitoring Plans

Your Floor-Level Mercury Vapor Measurement Plan required by §63.8192(d) prior to the applicable compliance date specified in §63.8186(a)(2) and Cell Room Monitoring Plan required by §63.8192(g) must contain the elements listed in the following table:

* * * * *

23. Table 10 to subpart IIII of part 63 is revised to read as follows:

Table 10 to Subpart IIII of Part 63—Applicability of General Provisions to Subpart IIII

As stated in §63.8262, you must comply with the applicable General Provisions requirements according to the following table:

Citation	Subject	Applies to Subpart IIII	Explanation
§63.1	Applicability	Yes	
§63.2	Definitions	Yes	
§63.3	Units and Abbreviations	Yes	
§63.4	Prohibited Activities	Yes	
§63.5	Construction/Reconstruction	Yes	
§63.6(a)-(g), (i), (j), except for (e)(1)(i) and (ii), (e)(3), and (f)(1).	Compliance with Standards and Maintenance Requirements	Yes	
§63.6(e)(1)(i) and (ii), (e)(3), and (f)(1).	SSM Requirements	Yes	Only applies until the date specified in §63.8186(a)(3)
§63.6(h)	Compliance with Opacity and Visible Emission Standards	No	Subpart IIII does not have opacity and visible emission standards.
§63.7(a) -(h), except for (a)(2) and (e)(1)	Performance Testing Requirements	Yes	Subpart IIII specifies additional requirements related to site-specific test plans and the conduct of performance tests.

§63.7(a)(2)	Applicability and Performance Test Dates	No	Subpart IIII requires the performance test to be performed on the compliance date.
§63.7(e)(1)	Performance Test Conditions	No	See §63.8232(a).
§63.8(a)(1), (a)(3); (b); (c)(1)(ii), (2)-(4), (6)-(8); (d)(1)-(2); (e); and (f)(1)-(5)	Monitoring Requirements	Yes	Only applies for CEMS, except Subpart IIII specifies how and when the performance evaluation results are reported.
§63.8(a)(2)	Continuous Monitoring System (CMS) Requirements	No	Subpart IIII requires a site-specific monitoring plan in lieu of a promulgated performance specification for a mercury concentration CMS.
§63.8(a)(4)	Additional Monitoring Requirements for Control Devices in §63.11	No	Subpart IIII does not require flares.
§63.8(c)(1)(i) and (iii)	CMS Operation and SSM Plan	Yes	Only applies until the date specified in §63.8186(a)(3)
§63.8(c)(5)	COMS Minimum Procedures	No	Subpart IIII does not have opacity and visible emission standards.
§63.8(d)(3)	Written Procedures for CMS	No	See §63.8242(a)(3)(v).
§63.8(f)(6)	Alternative to Relative Accuracy Test	No	Subpart IIII does not require CEMS.
§63.8(g)	Data Reduction	No	Subpart IIII specifies mercury concentration CMS data reduction requirements.
§63.9(a)-(e), (g)-(j)	Notification Requirements	Yes	
§63.9(f)	Notification of VE/Opacity Test	No	Subpart IIII does not have opacity and visible emission standards.
§63.9(k)	Electronic reporting procedures	Yes	Only as specified in §63.9(j)
§63.10(a); (b)(1); (b)(2)(vi)-(xii), (xiv); (b)(3); (c)(1)-(14); (d)(1), (4); (e); (f)	Recordkeeping/Reporting	Yes	
§63.10(b)(2)(i)-(v)	Recordkeeping/Reporting Associated with Startup, Shutdown, and Malfunctions	Yes	Only applies until the date specified in §63.8186(a)(3)

§63.10(b)(2)(xiii)	CMS Records for RATA Alternative	No	Subpart IIII does not require CEMS.
§63.10(c)(15)	Use of SSM Plan	Yes	Only applies until the date specified in §63.8186(a)(3)
§63.10(d)(2)	Performance Test Results	No	This subpart at 63.8232(g) specifies how and when the performance test results are reported electronically.
§63.10(d)(3)	Reporting Opacity or VE Observations	No	Subpart IIII does not have opacity and visible emission standards.
§63.10(d)(5)	Startup, Shutdown, and Malfunction Reports	No	
§63.10(e)(2)(i)	CEM Reporting	Yes	Except this subpart specifies how and when the performance evaluation results are reported.
§63.11	Flares	No	Subpart IIII does not require flares.
§63.12	Delegation	Yes	
§63.13	Addresses	Yes	
§63.14	Incorporation by Reference	Yes	
§63.15	Availability of Information	Yes	